

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

| | | |
|---|---|---------------------------------|
| In the Matter of |) | |
| |) | |
| International Bureau Invites Comment on |) | IB Docket No. 11-109 |
| NTIA Letter Regarding LightSquared |) | |
| Conditional Waiver |) | |
| |) | |
| LightSquared Subsidiary LLC |) | File No. SAT-MOD-20101118-00239 |
| Request for Modification of its Authority |) | |
| for an Ancillary Terrestrial Component |) | |
| |) | |
| Fixed and Mobile Services in the Mobile |) | ET Docket No. 10-142 |
| Satellite Service Bands |) | |

REPLY COMMENTS OF THE COALITION TO SAVE OUR GPS

James A. Kirkland
Vice President and General Counsel
TRIMBLE NAVIGATION LIMITED
935 Stewart Drive
Sunnyvale, CA 94085
(408) 481-8000

Paul G. Scolese
COALITION TO SAVE OUR GPS
1333 New Hampshire Avenue, N.W.
Washington, D.C. 20036-1564
(202) 887-4226

Howard J. Symons
Russell H. Fox
Jennifer A. Cukier
Angela Y. Kung
MINTZ, LEVIN, COHN, FERRIS,
GLOVSKY AND POPEO, P.C.
701 Pennsylvania Avenue, N.W.
Suite 900
Washington, DC 20004
(202) 434-7300

M. Anne Swanson
Jason E. Rademacher
DOW LOHNES PLLC
1200 New Hampshire Avenue, N.W.
Suite 800
Washington, DC 20036
(202) 776-2534

Counsel for Garmin International, Inc.

Counsel for Trimble Navigation Limited

Dated: March 30, 2012

TABLE OF CONTENTS

| | |
|---|----|
| SUMMARY | iv |
| I. LIGHTSQUARED’S ARGUMENTS ARE PREMISED ON ITS INACCURATE VIEW OF HISTORY – NAMELY, THAT IT ALWAYS HAD ALL THE AUTHORITY IT NEEDED TO PROVIDE A NATIONWIDE TERRESTRIAL NETWORK..... | 3 |
| A. The Commission Never Provided LightSquared with the Authority To Build a Ubiquitous Terrestrial Network. | 4 |
| 1. <i>The National Broadband Plan Shows That LightSquared Did Not Have Authority To Provide a Nationwide Terrestrial Service.</i> | 4 |
| 2. <i>Past FCC Decisions Show That LightSquared Did Not Have Authority To Provide a Nationwide Terrestrial Service.</i> | 5 |
| 3. <i>The Conditional Waiver Order Authorized a Fundamental Change in LightSquared’s Authorization and Put LightSquared on Clear Notice That It Could Not Move Forward If Interference to GPS Would Result.</i> | 8 |
| 4. <i>The Commission’s Actions in the 2 GHz Proceeding Confirm That It Never Authorized LightSquared To Provide Nationwide Terrestrial Service in the L-Band.</i> | 10 |
| B. LightSquared Never Had the Authority It Contends Because Such Authority Would Have Required the FCC To Auction LightSquared’s Spectrum. | 12 |
| C. Any Cooperation and Accommodations NTIA and the GPS Community Provided to LightSquared Were Premised on the Limited Nature of LightSquared’s Terrestrial Authority..... | 15 |
| II. GPS RECEIVERS ARE ENTITLED TO INTERFERENCE PROTECTION. | 17 |
| A. GPS Receivers Do Not Impermissibly “Listen” into Lightsquared’s Spectrum. | 17 |
| B. The FCC Has Made a Long-Standing Commitment To Protect GPS Regardless of Whether Such Devices Are Categorized under Part 15 or Part 25 of the Commission’s Rules..... | 20 |
| C. FCC Rules Place the Obligation Squarely on LightSquared To Resolve Any Interference Caused to GPS. | 25 |
| III. INDEPENDENT TESTING CONCLUSIVELY SHOWS THAT LIGHTSQUARED’S PROPOSED OPERATIONS WILL CAUSE HARMFUL INTERFERENCE TO A WIDE RANGE OF GPS DEVICES AND APPLICATIONS. | 26 |
| A. LightSquared Mischaracterizes Both the TWG’s and NTIA’s Findings..... | 27 |
| 1. <i>Cellular Devices</i> | 27 |

| | | |
|-----|---|----|
| 2. | <i>Personal/General Navigation Devices</i> | 28 |
| 3. | <i>Aviation Devices</i> | 28 |
| 4. | <i>High Precision Devices</i> | 29 |
| 5. | <i>Space-Based Devices</i> | 31 |
| B. | LightSquared’s Assertions That the Testing Was Flawed and Biased Are Self-Serving, Entirely Uncorroborated, and Wrong. | 31 |
| IV. | THE COMMISSION HAS AMPLE JUSTIFICATION TO VACATE THE <i>CONDITIONAL WAIVER ORDER</i> AND SUSPEND LIGHTSQUARED’S ATC AUTHORITY WITHOUT FURTHER DELAY..... | 34 |
| A. | The Proposed Actions Are Consistent with, and Adequately Address, the Concerns Raised by Recent Legislation and the <i>Conditional Waiver Order</i> | 34 |
| B. | The Record Provides Conclusive Evidence Justifying Adoption of the Commission’s Proposed Actions. | 35 |
| C. | LightSquared’s Proposed “Solutions” Are Unsupported in the Record and Merely Distract the Commission from Making the Finding That LightSquared’s Proposed Operations Will Cause Devastating Interference to GPS. | 38 |
| D. | Resolution of Issues Regarding Receiver Standards Is Not a Precondition to the Commission Taking the Actions It Proposes..... | 40 |
| E. | Besides Issuing a Decision Regarding Whether LightSquared Has Met the Noninterference Condition, the Commission Has No Further Obligation to LightSquared..... | 43 |
| V. | FAILURE TO VACATE THE <i>CONDITIONAL WAIVER ORDER</i> AND SUSPEND LIGHTSQUARED’S ATC AUTHORITY WOULD CAUSE GREAT HARM TO THE PUBLIC INTEREST. | 45 |
| A. | LightSquared Fails To Account for the Significant Benefits Already Being Delivered to the U.S. Population by GPS. | 45 |
| B. | The Negative Economic Effects Caused by Rejection of LightSquared’s Proposal Are Much Less Than the Negative Effects That Would Be Caused by the Commission Allowing LightSquared To Interfere with GPS. | 46 |
| C. | The Proposed Actions Would Not Have “Grave” Long-Term Effects on U.S. Spectrum Policy as LightSquared Contends..... | 49 |
| VI. | THE PROPOSED ACTIONS WOULD NOT VIOLATE EXISTING LAW..... | 50 |
| A. | The Proposed Actions Would Not Violate the Administrative Procedure Act..... | 50 |
| 1. | <i>The Arbitrary and Capricious Standard of Review Is Extremely Narrow, and the Bureau Has More Than Satisfied the APA’s Procedural Requirements.</i> | 51 |

| | | |
|-----|--|----|
| 2. | <i>The Bureau Has Engaged, and Is Engaging, in a Reasoned Analysis of the Effects of LightSquared’s Proposal on GPS.</i> | 53 |
| 3. | <i>The Decision to Vacate the Conditional Waiver Order Is Not Arbitrary and Capricious.</i> | 55 |
| 4. | <i>The Decision to Suspend Indefinitely LightSquared’s ATC Authority Is Not Arbitrary and Capricious.</i> | 56 |
| B. | The Proposed Actions Would Not Violate LightSquared’s Contractual Rights. | 57 |
| C. | The Proposed Actions Do Not Amount to an Unconstitutional Taking. | 59 |
| D. | The Proposed Actions Do Not Violate the Due Process Clause. | 62 |
| E. | The Proposed Actions Do Not Violate Either the Equal Protection Clause or the Bill of Attainder Clause. | 64 |
| VI. | CONCLUSION | 67 |

SUMMARY

The issue before the FCC’s International Bureau (the “Bureau”) is narrow – whether LightSquared Subsidiary LLC (“LightSquared”) has satisfied the condition in the *Conditional Waiver Order*, to which LightSquared acquiesced. The overwhelming evidence demonstrates that LightSquared has not satisfied the condition requiring that it demonstrate that it will not cause harmful interference to Global Positioning System (“GPS”) receivers. Therefore, LightSquared’s conditional authorization must be revoked by the terms of the *Conditional Waiver Order* to which it agreed. All of LightSquared’s arguments essentially try to cloud this inescapable conclusion and raise issues that are not relevant to the Bureau’s determination. As suggested in the *Public Notice*, it would also be in the public interest for the Bureau to take the additional step of suspending LightSquared’s terrestrial authority until it can demonstrate that its operations will not cause harmful interference to GPS.

LightSquared, and the relatively few parties that submitted comments supporting LightSquared, argues against the Bureau’s proposed action by relying on the faulty premise, endlessly repeated by LightSquared, that it always had authority to operate a nationwide terrestrial network in the L-Band Mobile Satellite Service (“MSS”) spectrum adjacent to the band used for GPS. This is simply not the case and continued repetition will not make it so. Statements made in the *National Broadband Plan*, past Commission decisions, the *Conditional Waiver Order*, and the recent 2 GHz MSS proceeding unequivocally demonstrate that the Commission never authorized ubiquitous, stand-alone terrestrial operations and services in the L-Band. In fact, it expressly prohibited them until the Bureau entertained the possibility of allowing such operations when it issued the *Conditional Waiver Order*. Had the Commission authorized stand-alone terrestrial services in the L-Band prior to that time, it would have been required to conduct an auction of the spectrum.

LightSquared’s argument that the National Telecommunications and Information Administration (“NTIA”) and the GPS community knew about LightSquared’s business plan is without merit, because any cooperation provided to LightSquared was given with the limited nature of LightSquared’s Ancillary Terrestrial Component (“ATC”) authority in mind. For LightSquared to suggest that any party is somehow bound by prior cooperation at the same time it is asking for a fundamental change in the terms and conditions applicable to its license – in this case, removing the prohibition of terrestrial-only service and replacing it with an authorization of ubiquitous, terrestrial service – is simply self-serving. These suggestions raise the art of “cherry picking” relevant Commission decisions to new heights.

In addition to continuing to distort history, LightSquared seeks to blame others in an attempt to justify why the Bureau should not take the action it proposed to take in January 2011. As usual, LightSquared argues that GPS receivers impermissibly “listen” into LightSquared’s spectrum, meaning that it should be free to ignore the devastating interference it will cause to GPS. LightSquared’s arguments are wrong for two reasons. First, GPS devices are state-of-the-art and perform precisely as intended – they are outstanding at picking up faint satellite signals in spectrum long set aside for satellite use. As much as LightSquared would like to obscure or ignore the fact, the license its predecessors received for free many years ago was, and still is, for mobile *satellite* service. Second, GPS receivers are clearly entitled to interference protection, and FCC rules unambiguously place the obligation on LightSquared to resolve any interference caused to GPS.

LightSquared’s interpretation of the test results is contradicted by nearly every other commenting party and the extensive technical record. Over a year after issuance of the *Conditional Waiver Order*, no credible, independent party has come forward to support

LightSquared's technical claims that its proposed operations will not cause harmful interference to millions of existing GPS receivers used for critical purposes every day. Given the plethora of parties that have come out in support of additional broadband services and competition, which are laudable goals, the absence of any independent technical support for LightSquared on the critical issue of interference to existing GPS receivers, the subject of the Bureau's condition to commencing operations, speaks volumes.

Indeed, all testing conclusively shows that LightSquared's proposed terrestrial operations will cause harmful interference to GPS and that mitigation is not possible at this time. Claims that the massive and thorough testing process fully involving LightSquared and representatives from both the public and private sectors was flawed, biased, or otherwise tainted again amount to nothing more than hollow, self-serving conspiracy theories.

Consequently, the Bureau is justified in adopting its proposal to vacate the *Conditional Waiver Order* and suspend indefinitely LightSquared's ATC authority. LightSquared has failed to show that its proposed terrestrial operations will not interfere with GPS, and while it was possible that operations under LightSquared's original ATC authorization could co-exist with GPS, testing has revealed that coexistence is not possible under LightSquared's current plan. LightSquared's proposed "solutions" are unsupported in the record and merely serve to delay, distract, or prevent the Bureau from adopting its proposed actions.

Besides determining whether LightSquared has met the non-interference condition and taking any other actions necessary to prevent LightSquared from causing harmful interference to GPS, the Commission has no further obligation to LightSquared. LightSquared took a gamble that it could convert its MSS spectrum to terrestrial use and lost that gamble. The Commission is not responsible for rescuing LightSquared from its failure to meet the Bureau's explicit

condition.

While adoption of the Bureau's proposed actions is fully supported by the record, failure to take the proposed actions would be contrary to the public interest because it would harm the many industries, government enterprises, and consumers that rely on GPS. Further, there is no credible evidence to support the claim that adoption of the Bureau's proposals will chill investment in spectrum-related services or otherwise have the "grave" long-term effects on U.S. spectrum policy that LightSquared claims.

LightSquared by its own admission paid discounted prices for restricted satellite spectrum in the hopes that it could persuade the Commission to change long-standing policies limiting terrestrial operations in the satellite band to "fill in" activities, policies reiterated by the Commission as recently as the 2010 *National Broadband Plan*. LightSquared and its predecessors were never allowed to interfere with GPS, nor were they ever allowed to deploy the terrestrial-only services that LightSquared's new owners first proposed in November 2010. LightSquared could and should have completed the regulatory approval process, and responsibly addressed the GPS interference issue, before it made investments that were premised on a subsequent decision to change the Commission's rules and policies. The actions proposed in the *Public Notice* do not send a chilling message to investors or spectrum users other than an entirely salutary one: bet on changes in Commission policies at your own risk.

In fact, LightSquared's arguments about investments and innovation support rescission of the Bureau's conditional waiver. LightSquared promised to invest billions in the future in a private, speculative, and high-risk business venture. GPS, on the other hand, represents tens of billions of dollars of investment of taxpayer money, which has already been made, in creating a critical national infrastructure that includes private hardware, software, and service innovations.

The United States has established a world-leading position in this essential technology as a result of all of these investments. If the Commission were to gamble on allowing LightSquared to deploy in the face of overwhelming technical evidence of harmful interference to the many critical and everyday applications of GPS, or had attempted, as LightSquared has suggested, to shift the costs of accommodating a new and unproven private spectrum use to other businesses, taxpayers, and consumers, that message would have been chilling indeed – no investment is safe from future changes in priorities or public policy agendas.

Adoption of the proposed actions also would not violate the Administrative Procedure Act, impact LightSquared’s contractual rights, amount to an unconstitutional taking, violate due process, or contravene the Equal Protection or Bill of Attainder Clauses. Such arguments are far-fetched and without merit. As a result, the Coalition urges the Bureau to provide certainty to GPS users and all other affected interests by taking immediate action to vacate the conditional waiver granted to LightSquared and suspend indefinitely its ATC authority.

Despite the many pages of obfuscation and elaborate but unsound legal theories that LightSquared offers, there is one and only one critical decisional issue before the Bureau: has LightSquared satisfied the Bureau’s requirement that it demonstrate non-interference to GPS. And the answer is equally simple: it has not.

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

| | | |
|---|---|---------------------------------|
| In the Matter of |) | |
| |) | |
| International Bureau Invites Comment on |) | IB Docket No. 11-109 |
| NTIA Letter Regarding LightSquared |) | |
| Conditional Waiver |) | |
| |) | |
| LightSquared Subsidiary LLC |) | File No. SAT-MOD-20101118-00239 |
| Request for Modification of its Authority |) | |
| for an Ancillary Terrestrial Component |) | |
| |) | |
| Fixed and Mobile Services in the Mobile |) | ET Docket No. 10-142 |
| Satellite Service Bands |) | |

REPLY COMMENTS OF THE COALITION TO SAVE OUR GPS

The Coalition to Save Our GPS along with its members Trimble Navigation Limited and Garmin International, Inc. (collectively referred to herein as the “Coalition”), hereby submit these reply comments in response to the initial comments filed in the above-referenced proceedings regarding the letter from the National Telecommunications and Information Administration (“NTIA”) to the Commission concluding that the terrestrial operations proposed by LightSquared Subsidiary LLC (“LightSquared”) will cause harmful interference to Global Positioning System (“GPS”) receivers that cannot be mitigated at this time and the proposal of the FCC’s International Bureau (the “Bureau”) to (1) vacate its *Conditional Waiver Order* and (2) suspend indefinitely LightSquared’s Ancillary Terrestrial Component (“ATC”) authorization.^{1/}

^{1/} *International Bureau Invites Comment on NTIA Letter Regarding LightSquared Conditional Waiver*, Public Notice, Docket No. 11-109, DA 12-214, at 3 (rel. Feb. 15, 2012) (“*Public Notice*”); *LightSquared Technical Working Group Report*, Order, Docket No. 11-109, DA 12-320 (rel. Feb. 29, 2012) (extending the comment deadline in the *Public Notice* to March 16, 2012 and providing for a reply period ending March 30, 2012); Letter from Lawrence E. Strickling, Assistant Secretary for

LightSquared’s extensive attack on the Bureau’s proposed actions misses the point. The overwhelming credible evidence demonstrates that its operations will cause harmful interference to GPS – a national utility that is used in countless critical applications. Whatever hope there may be for holders of mobile satellite licenses to conduct terrestrial operations in the future – if and when they can demonstrate that they can operate without causing massive interference to GPS or imposing massive costs on existing GPS users – does not undermine the Bureau’s current proposals. Almost all commenters agree. The few that do not, including LightSquared, continue to argue that, based on a contorted view of history, the FCC must “honor its commitment” to LightSquared so that it can provide wireless broadband service. No matter how many times it repeats it, LightSquared’s account of prior Commission decisions is simply wrong. LightSquared never had the authority to use its Mobile Satellite Service (“MSS”) spectrum to provide nationwide, terrestrial-only services.

LightSquared made a bet that it could change fundamental Commission policies and convert MSS spectrum to ubiquitous terrestrial use and gain authorization for terrestrial-only services. LightSquared lost that bet and now blames others for its miscalculation, and wants the FCC to save it from its mistakes. Creating wireless broadband capacity is an important national goal. Saving a private party that has been unable to meet express regulatory requirements – not the least of which is a specific condition in the *Conditional Waiver Order* – is not.

Communications and Information, U.S. Dep’t of Commerce, to the Honorable Julius Genachowski, Chairman, FCC, at 1 (Feb. 14, 2012) (“*NTIA Letter*”). Except where otherwise indicated, LightSquared Subsidiary LLC, LightSquared Inc., and its predecessors and affiliates are referred to herein individually and collectively as “LightSquared.”

I. LIGHTSQUARED’S ARGUMENTS ARE PREMISED ON ITS INACCURATE VIEW OF HISTORY – NAMELY, THAT IT ALWAYS HAD ALL THE AUTHORITY IT NEEDED TO PROVIDE A NATIONWIDE TERRESTRIAL NETWORK.

Nearly every argument presented by LightSquared in its comments is based on the incorrect premise that it always had the authority to use its MSS spectrum for nationwide terrestrial operations.^{2/} For instance, LightSquared attempts to show that the “expectations with respect to the primary aspects of the ATC operating environment have not changed materially since 2005.”^{3/} As shown repeatedly by the Coalition and other parties, however, the Commission specifically prohibited the type of ubiquitous terrestrial-only services proposed by LightSquared prior to issuance of the *Conditional Waiver Order*, in which the Bureau expressly waived the rules to permit what had been earlier prohibited, subject to various conditions including a showing of non-interference to GPS.^{4/}

^{2/} The GPS industry has filed a petition for reconsideration in a separate proceeding to request that the Commission correct historical misstatements in the record that are based on this view. *See Fixed and Mobile Services in the Mobile Satellite Service Bands at 1525-1559 MHz and 1626.5-1660.5 MHz, 1610-1626 MHz and 2483.5-2500 MHz, and 2000-2020 MHz and 2180-2200 MHz*, Report and Order, 26 FCC Rcd 5710, ¶ 28 (2011), *recon. pending*; *Petitions for Reconsideration of Action in Rulemaking Proceeding*, Public Notice, Docket No. 10-142, Report No. 2932 (rel. July 29, 2011); Petition for Reconsideration of the U.S. GPS Industry Council, Docket No. 10-142 (filed June 30, 2011).

^{3/} Comments in Opposition of LightSquared Inc., Docket No. 11-109, File No. SAT-MOD-20101118-00239, at 40 (filed March 16, 2012) (“LightSquared Comments”); *id.* at 43 (arguing that “the expected operating environment in the MSS/ATC Band today essentially is the same as it was in 2005”).

^{4/} *LightSquared Subsidiary LLC Request for Modification of its Authority for an Ancillary Terrestrial Component*, Order and Authorization, 26 FCC Rcd 566, ¶¶ 24-25, 41 (2011) (“*Conditional Waiver Order*”); Comments of the Coalition to Save Our GPS, Docket Nos. 11-109 & 10-142, File No. SAT-MOD-20101118-00239, at 23-28 (filed March 16, 2012) (“Coalition Comments”); Coalition to Save Our GPS Opposition to LightSquared Petition for Declaratory Ruling, Docket Nos. 11-109 & 10-142, at 9-13 (filed Feb. 27, 2012) (“Coalition Opposition”); Reply Comments of the Coalition to Save Our GPS, WT Docket No. 11-186, at 2-5 (filed Dec. 20, 2011); Comments of Deere & Company, Docket No. 11-109, at 33 (filed Aug. 1, 2011) (“Deere TWG Comments”); Comments of Trimble Navigation Limited, Docket No. 11-109, at 15 n.42 (filed Aug. 1, 2011) (“Trimble TWG Comments”).

A. The Commission Never Provided LightSquared with the Authority To Build a Ubiquitous Terrestrial Network.

The *National Broadband Plan*, past Commission decisions, the *Conditional Waiver Order*, and the Commission's recent Notice of Proposed Rulemaking ("NPRM") in the 2 GHz proceeding all show that LightSquared's authority did not permit it to operate a stand-alone terrestrial network in the L-Band.

1. *The National Broadband Plan Shows That LightSquared Did Not Have Authority To Provide a Nationwide Terrestrial Service.*

The discussion in the *National Broadband Plan* regarding MSS/ATC operations alone disposes of LightSquared's assertion that it always had authority to provide terrestrial-only services. As part of the Commission's goal in the *National Broadband Plan* to make 300 megahertz of spectrum available within five years and a total of 500 megahertz available within ten years, the *National Broadband Plan* aimed to "accelerate terrestrial deployment in 90 megahertz of Mobile Satellite Spectrum (MSS)."^{5/} The *National Broadband Plan* recognized that while the FCC had authorized use of ATC for MSS operations in 2003, that authority was limited to "areas where the satellite signal is attenuated or unavailable."^{6/}

In considering how to promote more intensive use of the MSS spectrum for terrestrial operations, the *National Broadband Plan* said that the FCC should "ensure that these actions to introduce greater flexibility in the MSS spectrum do not interfere with non-ATC MSS operations"^{7/} The FCC said that it, and other government agencies, "should work closely with L-Band licensees and foreign governments to accelerate efforts to rationalize ATC-

^{5/} *Connecting America: The National Broadband Plan*, at 10, 76 ("National Broadband Plan"), available at <http://www.broadband.gov/download-plan/>.

^{6/} *Id.* at 87.

^{7/} *Id.*

authorized L-Band spectrum . . .”^{8/} These statements show the FCC’s recognition of the limited nature of LightSquared’s and its predecessors’ ATC authority and the FCC’s contemplation that further concerted action would be required to remove existing constraints governing the L-Band and free the spectrum for terrestrial-only use. With respect to the L-Band, the FCC never initiated any rulemaking or other proceedings to change these fundamental policies, and instead elected to proceed through a conditional waiver that prohibited terrestrial operations unless it could be demonstrated that there would not be interference to GPS. Considering the Commission’s statements in the *National Broadband Plan* alone, it is unreasonable for LightSquared to believe that its license always permitted it to engage in ubiquitous, stand-alone terrestrial operations and provide terrestrial-only services.^{9/}

2. *Past FCC Decisions Show That LightSquared Did Not Have Authority To Provide a Nationwide Terrestrial Service.*

Prior Bureau and FCC decisions also clearly demonstrate that LightSquared did not have authority to engage in terrestrial-only operations under its license. LightSquared acquired its current spectrum license from its predecessor in interest – SkyTerra – which had been granted authority to provide MSS without *any* ability to provide terrestrial services. In the *2003 ATC*

^{8/} *Id.*

^{9/} The *National Broadband Plan* was released the same month that the Bureau approved the transfer of control of the company now known as LightSquared to its current owners, Harbinger Capital, and the Order approving the transfer refers to LightSquared’s predecessor’s authority throughout as enabling it to operate an integrated satellite/terrestrial network, not a stand-alone terrestrial network. See *SkyTerra Communications, Inc., Transferor, and Harbinger Capital Partners Funds, Transferee, Applications for Consent to Transfer of Control of SkyTerra Subsidiary, LLC*, Memorandum Opinion and Order and Declaratory Ruling, 25 FCC Rcd 3059, ¶ 55 (2010) (“Harbinger plans to construct an integrated satellite/terrestrial [4G] mobile broadband network that primarily uses SkyTerra’s ATC authority and SkyTerra’s new next generation satellites – SkyTerra-1 and SkyTerra-2 – the first of which is expected to be launched between August and October 2010.”); *id.* ¶ 57 (“If deployed as planned, Harbinger’s integrated satellite/terrestrial 4G mobile wholesale broadband network will form another platform for innovation and growth of the U.S. economy.”).

Decision, the FCC revised its MSS rules to allow the integration of ATC into MSS networks.^{10/}

This rule change, however, only allowed SkyTerra the right to seek authority to provide an *ancillary* service. The purpose behind allowing MSS licensees to integrate ATC into their MSS networks was to enable them to provide terrestrial services in locations where the satellite could not reliably deliver a sufficiently strong signal.^{11/} ATC was therefore seen merely as a “gap filler” to *enhance* primary mobile satellite services, not to displace them.^{12/} In the *2003 ATC Decision*, the Commission specifically stated that it would not allow terrestrial-only services like those featured in LightSquared’s current business plan and the proposal presented to the Commission in November 2010.^{13/} The Commission explained that it intended to authorize ATC *only* as an ancillary service to the provision of the principal service, MSS, and noted that it would not tolerate any attempts by licensees to circumvent this fundamental requirement by using MSS spectrum for stand-alone terrestrial services.^{14/}

^{10/} *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, Report and Order and Notice of Proposed Rulemaking, 18 FCC Rcd 1962, ¶ 1 (2003) (“*2003 ATC Decision*”).

^{11/} *Id.* ¶ 23 (finding that by “filling gaps in the MSS coverage area . . . , MSS ATC should [] permit customers in underserved or unserved terrestrial markets to use ATC-enabled MSS handsets when in urban areas or inside buildings”).

^{12/} *Id.* ¶ 68 (“[B]y using the term ‘ancillary,’ we intended to exclude ‘services that differ materially in nature or character from the principal services offered by MSS providers.’”) (citation omitted); *see also* Comments of the U.S. GPS Industry Council, Docket No. 11-109, File No. SAT-MOD-20101118-00239, at 11-12 (filed March 16, 2012) (“USGIC Comments”) (“MSS ATC was originally established as a gap-filler offering, truly supplementary to MSS, with the sole objective of enabling the MSS operator to improve the availability of its satellite-based, primarily narrowband voice, service in hard to reach areas such as urban canyons and locations with natural terrain obstructions.”).

^{13/} *2003 ATC Decision* ¶ 1 (“We will authorize MSS ATC subject to conditions that ensure that the added terrestrial component remains ancillary to the principal MSS offering. We do not intend, nor will we permit, the terrestrial component to become a stand-alone service.”).

^{14/} *Id.* ¶ 3 n.5 (“While it is impossible to anticipate or imagine every possible way in which it might be possible to ‘game’ our rules by providing ATC without also simultaneously providing MSS and while we do not expect our licensees to make such attempts, we do not intend to allow such ‘gaming.’ For example, even if an MSS licensee were to enter an agreement to lease some or all of the access to its authorized MSS spectrum to a terrestrial licensee, such spectrum could only be used if its usage met the requirements to ensure it remained ancillary to MSS and were used in conjunction with MSS operations,

The Commission's subsequent *2005 ATC Decision* confirmed that it never intended to grant LightSquared's predecessors authority to provide ubiquitous, terrestrial-only broadband services.^{15/} To the contrary, that decision included strong protections for GPS that are inconsistent with the type of stand-alone terrestrial service LightSquared claims it was authorized to provide. For instance, in that decision, the Commission expressly committed to proactively protect GPS from harmful interference by consulting with affected government users and by adopting whatever rules might be necessary in the future.^{16/} Therefore, even if LightSquared mistakenly believed prior to the *Conditional Waiver Order* that its predecessors were authorized to provide a stand-alone terrestrial system, it should have still recognized that the authority was always subject to the obligation to protect GPS. The Commission's decisions have consistently recognized the critical benefits that GPS provides and the need to ensure that there is no

i.e., that it met all of our gating requirements. The purpose of our grant of ATC authority is to provide satellite licensees flexibility in providing satellite services that will benefit consumers, not to allow licensees to profit by selling access to their spectrum for a terrestrial-only service.”).

^{15/} *Flexibility for Delivery of Communications by Mobile Satellite Service Providers in the 2 GHz Band, the L-Band, and the 1.6/2.4 GHz Bands*, Memorandum Opinion and Order and Order and Second Order on Reconsideration, 20 FCC Rcd 4616, ¶ 33 (2005) (“*2005 ATC Decision*”) (“We reiterate our intention not to allow ATC to become a stand-alone system . . . We will not permit MSS/ATC operators to offer ATC-only subscriptions, because ATC systems would then be terrestrial mobile systems separate from their MSS systems.”).

^{16/} *Id.* ¶ 70 (“While we agree with the GPS Industry Council, NTIA, and other government agencies that it is essential to ensure that GPS does not suffer harmful interference, it is also important to ensure that new technologies are not unnecessarily constrained. In this regard, we recognize that the President’s new national policy for space-based positioning, navigation, and timing (PNT) directs the Secretary of Commerce to protect the radio frequency spectrum used by GPS and its augmentations through appropriate domestic and international spectrum management regulatory practices Furthermore, the President’s PNT policy calls for the establishment of an inter-agency Executive Committee, on which the Chairman of the FCC will be invited to participate as a liaison, and a National Space-Based PNT Coordination Office. It is our intention to establish discussions with other agencies, through the PNT Executive Committee and Coordination Office as appropriate, to better understand what protection levels for GPS are warranted. The results of those discussions may lead to future rulemaking proposals in order to ensure that all FCC services provide adequate protection to GPS, and produce a more complete record upon which to establish final GPS protection limits for MSS ATC licensees.”) (emphasis added).

interference to GPS operations.^{17/}

3. *The Conditional Waiver Order Authorized a Fundamental Change in LightSquared's Authorization and Put LightSquared on Clear Notice That It Could Not Move Forward If Interference to GPS Would Result.*

If there was any confusion prior to January 2011 about what LightSquared had previously been authorized to do (and there should not have been), the *Conditional Waiver Order* eliminated that ambiguity. The *Conditional Waiver Order* is clear: LightSquared's existing authority did not permit it to provide a nationwide terrestrial service and it would only be allowed to do so if and when it could demonstrate non-interference to GPS.

LightSquared ignores this most important aspect of the *Conditional Waiver Order*, opting instead to make the inaccurate claim that the *Conditional Waiver Order* “did not alter the fundamental parameters of LightSquared's ATC license.”^{18/} The *Conditional Waiver Order* for the first time considered granting LightSquared the authority to provide a stand-alone terrestrial service. Indeed, in the *Conditional Waiver Order*, the Bureau consistently referred to LightSquared's existing authority as enabling it to operate a satellite/terrestrial network.^{19/} In response to LightSquared's attempted “update” of its service offering to provide a ubiquitous terrestrial network, the Bureau found that LightSquared's plans were not covered by its existing

^{17/} See, e.g., 2003 ATC Decision ¶ 183 (requiring L-Band ATC base stations and mobile terminals to meet certain out-of-band emission levels, operate under a maximum transmit power, and incorporate a guard band “in order to demonstrate that its base stations will be capable of meeting the -70 dBW/MHz and -80 dBW for discrete spurious emissions measured in a 700 MHz bandwidth to protect GPS”).

^{18/} LightSquared Comments at 34; *id.* at 3 (stating that LightSquared's “fundamental business model has remained the same”); *id.* at 45 (“Contrary to the NTIA's suggestion, the *Conditional Waiver Order* had no bearing on the fundamental technical parameters of LightSquared's network.”).

^{19/} *Conditional Waiver Order* ¶ 1 (noting the consideration of build-out requirements associated with LightSquared's deployment of a “satellite/terrestrial network in the L-Band”); *id.* ¶ 7 (“In approving [LightSquared's] transfer of control, we observed that if LightSquared successfully deploys its integrated satellite/terrestrial 4G network, it will be able to provide mobile broadband communications in areas where it is difficult or impossible to provide coverage by terrestrial base stations . . . , as well as at times when coverage may be unavailable from terrestrial-based networks . . .”); *id.* ¶ 31 (“A grant of a waiver here will enable LightSquared to implement its proposed satellite/terrestrial service offering . . .”).

authority and required a waiver of the “integrated service” rule.^{20/} Even though the Bureau granted LightSquared’s request, it conditioned that relief on LightSquared’s continued commitment to provide satellite services.^{21/} More importantly, the Bureau also required LightSquared to demonstrate that it would not cause harmful interference to GPS operations.^{22/} This latter condition was based, in part, on the concerns that NTIA, the U.S. GPS Industry Council (“USGIC”), and others expressed about the potential impact that the waiver would have on GPS operations.^{23/}

In response to the *Conditional Waiver Order*, LightSquared did not challenge the Bureau’s determination that it lacked authority to provide terrestrial-only services. Nor did it challenge the Bureau’s determination that it should demonstrate that it would not cause harmful interference to GPS. It disagrees with those findings now, arguing that it always had authority to provide ubiquitous terrestrial service and that the authority exists regardless of the impact on GPS. Its change in position is related directly to the Bureau’s proposal. The Bureau should see LightSquared’s change for what it is – an attempt to change the rules after the game has been played.

LightSquared’s analysis of the Commission’s prior orders as well as its re-

^{20/} *Id.* ¶¶ 24-25.

^{21/} *Id.* ¶ 36.

^{22/} *Id.* ¶ 41.

^{23/} See Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, U.S. Dep’t of Commerce, to Julius Genachowski, Chairman, FCC, File No. SAT-MOD-20101118-00239, at 1 (filed Jan. 12, 2011); Letter from Stephen D. Baruch, Counsel for the U.S. GPS Industry Council, to Marlene H. Dortch, Secretary, FCC, File No. SAT-MOD-20101118-00239, at 1 (filed Jan. 7, 2011); see also Letter from Raul R. Rodriguez, Counsel for the U.S. GPS Industry Council, to Marlene H. Dortch, Secretary, FCC, File No. SAT-MOD-20101118-00239, at Attachment, at 1 (filed Jan. 7, 2011). As the Bureau was considering LightSquared’s request, LightSquared continued to assert that interference to GPS was “highly unlikely,” acknowledging that any interference it caused to GPS would be problematic. See Letter from Jeff Carlisle, Executive Vice President, Regulatory Affairs & Public Policy, LightSquared, to Marlene H. Dortch, Secretary, FCC, File No. SAT-MOD-20101118-00239 (filed Dec. 20, 2010).

characterization of the *Conditional Waiver Order* fails the most basic scrutiny. If LightSquared had always been authorized to provide ubiquitous nationwide terrestrial-only services, and this “commitment” and other prior Commission decisions meant that GPS was not protected from these operations, why did the *Conditional Waiver Order* state that LightSquared could proceed with these “long-approved plans” only if it could demonstrate non-interference to GPS? And why did LightSquared accept this condition without objection if it was contrary to its long-standing “rights”? The answer is simple: LightSquared never had any such rights, or any form of prior approval which is relevant to its current proposals.

4. *The Commission’s Actions in the 2 GHz Proceeding Confirm That It Never Authorized LightSquared To Provide Nationwide Terrestrial Service in the L-Band.*

In addition to recommending that the Commission free the L-Band for terrestrial broadband use, the *National Broadband Plan* similarly contemplated allowing stand-alone terrestrial operations in the 2 GHz MSS spectrum as part of its goal to “accelerate terrestrial deployment in 90 megahertz” of MSS spectrum.^{24/} While the same *National Broadband Plan* goal applied to both MSS bands, the Commission, in the case of the 2 GHz band, modified the Table of Frequency Allocations to add a primary terrestrial allocation and initiated a 2 GHz rulemaking proceeding to “carry out [the] recommendation in the *National Broadband Plan* that the Commission enable the provision of stand-alone terrestrial services in this spectrum.”^{25/} The Commission, however, took no such actions with respect to the L-Band. No similar L-Band rulemaking has been initiated, providing further evidence that the premise underlying each of LightSquared’s arguments that it always had authority to use its MSS authorization for

^{24/} See *Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands, et al.*, Notice of Proposed Rulemaking and Notice of Inquiry, Docket No. 12-70, *et al.*, FCC 12-32, ¶ 13 (rel. March 21, 2012) (“2 GHz NPRM”); *National Broadband Plan* at 76.

^{25/} 2 GHz NPRM ¶¶ 1, 13-14.

nationwide terrestrial operations simply cannot be true. In fact, the Commission in the 2 GHz *NPRM* specifically noted that it has yet to take the actions necessary to allow stand-alone terrestrial operations in the L-Band, observing that it intends to address the ATC rules for L-Band MSS “in one or more separate proceedings at a later date.”^{26/}

The 2 GHz *NPRM* further confirms the limited nature of the ATC authority established in the 2003 *ATC Decision*, stating that it was designed to allow “authorized MSS operators to augment their satellite services with terrestrial facilities” and that in order to “ensure that ATC would be ancillary to the provision of MSS, the Commission determined that ATC authority would be limited to MSS operators who met specific ‘gating’ criteria.”^{27/} One of the gating criteria established was the integrated service rule, which required any ATC operations to be integrated with the underlying satellite service and prohibited terrestrial-only services. It was this rule that the Bureau conditionally waived for LightSquared in the *Conditional Waiver Order*.^{28/}

The 2 GHz *NPRM* also explains that at the time ATC operations were authorized, it was determined that separate stand-alone terrestrial services – for instance, those that the Commission could authorize a third party to provide – would not be permitted because such services would impermissibly interfere with the primary MSS service.^{29/} As a result, the Commission concluded that only limited ATC authority should be granted to existing MSS licensees, and it “enacted unique MSS/ATC technical rules,” which did not “fully align” with the

^{26/} *Id.* ¶ 136; *see also id.* ¶ 2.

^{27/} *Id.* ¶ 5.

^{28/} *Conditional Waiver Order* ¶¶ 24-25.

^{29/} 2 GHz *NPRM* ¶ 6 (quoting 2003 *ATC Decision* ¶ 65).

technical rules for terrestrial operations in other bands.^{30/}

The 2 GHz NPRM revisits this decision and other important issues governing terrestrial use of the 2 GHz MSS band. In particular, the 2 GHz NPRM addresses whether terrestrial licenses can be issued to parties other than the current MSS licensees;^{31/} if third party licenses are issued, whether they should be issued via competitive auction;^{32/} the protection of operations in adjacent bands from harmful interference;^{33/} the potential for receiver overload interference;^{34/} and the possible elimination of the current ATC authorizations and governing rules pertaining to the band.^{35/} Had the Commission intended to authorize the L-Band for stand-alone terrestrial operations prior to the issuance of the *Conditional Waiver Order*, there is no reason to think that it would not have confronted similar issues or undertaken a similarly thorough analysis.

B. LightSquared Never Had the Authority It Contends Because Such Authority Would Have Required the FCC To Auction LightSquared's Spectrum.

As demonstrated above, the FCC did not intend to support a stand-alone terrestrial service when it created ATC rights. If the FCC had intended otherwise – and wanted to authorize the type of terrestrial service that LightSquared argues it already has – it would have been required to conduct an auction for the service. Under Section 309(j) of the Communications Act, the Commission is required to conduct an auction if it receives mutually exclusive applications for a license. If the Commission created the type of terrestrial authority in 2003 that LightSquared believes now exists, the FCC would have certainly received numerous

^{30/} *Id.* ¶¶ 6, 28.

^{31/} *Id.* ¶¶ 69-73.

^{32/} *Id.* ¶ 80.

^{33/} *Id.* ¶ 34.

^{34/} *Id.* ¶ 56.

^{35/} *Id.* ¶ 136.

competing applications, triggering its auction obligation. Instead, when the FCC first authorized terrestrial operations by MSS licensees, it relied on the limited nature of those operations to support a finding that no new service was being created and that there was no requirement to accept competing applications that might trigger its auction obligations.^{36/}

The *National Broadband Plan* confirms that an auction would have been necessary if ATC had been understood to permit a stand-alone terrestrial service. Addressing the potential use of MSS spectrum for terrestrial purposes, the *National Broadband Plan* explicitly recognized that existing licensees would receive a “stepped up” value to their licenses and that the FCC had previously granted to MSS licensees only limited ATC authority, and not authority to operate a more profitable free-standing, ubiquitous terrestrial network.^{37/} Had the FCC intended to provide licensees with that “stepped up” value in 2003, it would not have reached the same conclusions regarding the applicability of Section 309(j) of the Act.

However, the FCC did not even accept competing applications and pursue conducting an auction for terrestrial authority because it found that it was creating authority that was incidental to, and integrated with, the existing satellite authority, and that it was not creating authority for

^{36/} In the *2003 ATC Decision*, the FCC considered whether the grant of terrestrial rights under MSS licenses triggered statutory requirements to conduct an auction for these rights in which other parties could participate. The FCC concluded that the initial limited grant of terrestrial rights to MSS licensees did not trigger these requirements, stating that:

We are also not persuaded that allowing MSS operators to incorporate ATCs without going through a competitive bidding process is inequitable to CMRS [Commercial Mobile Radio Service] carriers or will unjustly enrich those MSS operators such that we must treat the modifications of their authorizations as initial licenses. The modifications we permit today may indeed make MSS licenses more valuable. However, *given the strict limitations we are placing on ATC authority*, and the significant costs of launching and maintaining satellite operations, we do not believe that such added value will rise to a level that constitutes unjust enrichment or requires that we consider the modification of MSS licenses to include ATC authority as the assignment of initial licenses.

2003 ATC Decision ¶ 226 (emphasis added). The “strict limitations” that the FCC relied upon were the gating criteria, which limited terrestrial-only operations.

^{37/} *National Broadband Plan* at 87.

licensees to offer a stand-alone terrestrial service. It found that it was merely authorizing modifications of the satellite licenses and that those modifications would not be “so different in kind or so large in scope and scale . . .”^{38/} Indeed, the FCC found that it would *not* be authorizing a service that would compete with existing terrestrial wireless services. It noted that MSS/ATC and terrestrial wireless services would not be “perfect substitutes” for each other but that they would have “different prices, coverage, product acceptance and distribution” and that they “would be operating in predominantly different market segments.”^{39/} The Commission found that ATC providers would be “unlikely to compete directly with terrestrial CMRS for the same customer base.”^{40/}

As the *National Broadband Plan* recognized, allowing LightSquared to obtain what is essentially a new terrestrial license without competing in an auction would confer a windfall on LightSquared and deprive the American public of compensation for this valuable resource that could help reduce the deficit. Since 1993, our nation’s scarce spectrum resources have been auctioned to the highest bidder, with the proceeds going to the U.S. Treasury. The spectrum that LightSquared now holds was awarded for free in 1989.^{41/} In a study submitted to the FCC, which purported to estimate the economic benefits of its broadband proposal, LightSquared’s own consultants concluded that satellite spectrum, like that originally granted to LightSquared’s

^{38/} 2003 ATC Decision ¶ 225.

^{39/} *Id.* ¶ 39.

^{40/} *Id.* ¶ 41.

^{41/} See Amendment of Parts 2, 22 and 25 of the Commission’s Rules to Allocate Spectrum for and to Establish Other Rules and Policies Pertaining to the Use of Radio Frequencies in a Land Mobile Satellite Service for the Provision of Various Common Carrier Services, et al., Memorandum Opinion, Order and Authorization, 4 FCC Rcd 6041 (1989), remanded by *Aeronautical Radio, Inc. v. FCC*, 928 F.2d 428 (D.C. Cir. 1991), Final Decision on Remand, 7 FCC Rcd 266 (1992), *aff’d*, *Aeronautical Radio, Inc. v. FCC*, 983 F.2d 275 (D.C. Cir. 1993); see also *SkyTerra Communications, Inc., Transferor, and Harbinger Capital Partners Funds, Transferee, Applications for Consent to Transfer of Control of SkyTerra Subsidiary, LLC*, Memorandum Opinion and Order and Declaratory Ruling, 25 FCC Rcd 3059 (2010).

predecessors, is currently worth approximately \$2 billion dollars if it is limited to satellite use.^{42/} However, the same report estimated that LightSquared's mobile satellite spectrum is worth \$12 billion if it can be used for unrestricted terrestrial mobile broadband services, a difference of \$10 billion.^{43/} This estimate is consistent with auction results over the last several years. For example, when the FCC in 2008 auctioned 700 MHz spectrum licenses covering the entire country for terrestrial broadband use, it generated approximately \$19.6 billion for the U.S. Treasury.^{44/} Similarly, the auction for Advanced Wireless Service ("AWS") spectrum raised approximately \$13.7 billion in 2006.^{45/} Consequently, it is clear that LightSquared's owners would receive a massive and unjustified windfall due to the dramatic change in the value of the spectrum if it could be used for stand-alone terrestrial services.

C. Any Cooperation and Accommodations NTIA and the GPS Community Provided to LightSquared Were Premised on the Limited Nature of LightSquared's Terrestrial Authority.

In support of its erroneous assertion that it was always authorized to provide a nationwide terrestrial broadband service, LightSquared again asserts that NTIA and the GPS community acquiesced in LightSquared's current business plan by agreeing over time to various changes in the technical parameters governing LightSquared's ATC authority.^{46/} RCA – The Competitive Carriers Association ("RCA") advances the same inaccurate premise as LightSquared, asserting

^{42/} See Coleman Bazelon, The Brattle Group, Inc., *GPS Interference: Implicit Subsidy to the GPS Industry and Cost to LightSquared of Accommodation*, at 1 n.2, 8-9 (June 22, 2011), available at http://www.brattle.com/_documents/UploadLibrary/Upload957.pdf.

^{43/} See *id.* at 1 n.2. LightSquared may have done even better than that – according to statements made by Jeffrey Carlisle to the press, LightSquared has spent “several hundreds of millions” of dollars on spectrum. See Peter B. de Selding, *LightSquared Plans Hinge on Outcome of GPS Interference Debate*, SPACE NEWS INT'L, March 4, 2011.

^{44/} See *Auction of 700 MHz Band Licenses Closes*, Public Notice, 23 FCC Rcd 4572, ¶ 2 (2008).

^{45/} See *Auction of Advanced Wireless Services Licenses Closes*, Public Notice, 21 FCC 10521 (2006).

^{46/} LightSquared Comments at 23-33.

that the “GPS industry . . . had a decade to address receiver interference issues” and stating that “[i]nstead of working with LightSquared to resolve the concern, the GPS industry waited until the eleventh hour to raise the issue.”^{47/}

In order to prove its point that NTIA and the GPS community were “intimately involved” in reviewing LightSquared’s business plan, LightSquared attempts to show the various ways in which NTIA and the GPS community attempted to cooperate with LightSquared’s predecessors.^{48/} As demonstrated numerous times throughout these proceedings, however, the cooperation and even support provided by NTIA and the GPS industry over time was always based on the limited nature of LightSquared’s ATC authorization, and the FCC’s repeated assurances that the L-Band would not be authorized for stand-alone terrestrial services and that GPS would be protected.^{49/} The USGIC agrees, stating in its comments that it “has cooperated and worked with LightSquared’s predecessor, the federal agencies, and NTIA, to protect existing and evolving GPS operations, based on the facts about the original ATC model of operation (*i.e.*, primarily voice, gap-filler) that were available at the time.”^{50/}

And in any event, it was not until November 2010 that LightSquared, for the first time, indicated that it planned to offer terrestrial-only services,^{51/} as the Bureau itself recognized.^{52/} As a result, NTIA and the GPS industry could not have spent the last decade reviewing

^{47/} Comments of RCA – The Competitive Carriers Association, Docket No. 11-109, at 5 (filed March 16, 2012) (“RCA Comments”).

^{48/} LightSquared Comments at 23-33,

^{49/} *See, e.g.*, Coalition Opposition at 13-15; Comments of the U.S. GPS Industry Council, Docket No. 11-109, at 29-39 (filed Aug. 1, 2011) (“USGIC TWG Comments”); Deere TWG Comments at 18-22; Trimble TWG Comments at 29-39.

^{50/} USGIC Comments at 4.

^{51/} *See* Letter from Jeffrey J. Carlisle, Executive Vice President, Regulatory Affairs & Public Policy, LightSquared, to Marlene H. Dortch, Secretary, FCC, File No. SAT-MOD-20101118-00239 (filed Nov. 18, 2010).

^{52/} *Conditional Waiver Order* ¶ 24.

LightSquared's business plan, because LightSquared's business plan fundamentally changed as evidenced by the Bureau's need to issue LightSquared a conditional waiver to authorize terrestrial-only service.

Moreover, as stated in the Coalition's initial comments, LightSquared's suggestion that the Commission's express restrictions on permitted terrestrial use of the spectrum were somehow eliminated by discrete modifications to certain specific technical rules must be rejected.^{53/} Such an indirect approach to changing the authorized operations in the L-Band would never withstand judicial scrutiny. Further, it is hard to imagine that the Commission would proceed in such a cryptic fashion given the thorough and public analysis currently being undertaken with respect to allowing terrestrial-only operations in the 2 GHz band.^{54/}

II. GPS RECEIVERS ARE ENTITLED TO INTERFERENCE PROTECTION.

A. GPS Receivers Do Not Impermissibly "Listen" into LightSquared's Spectrum.

Despite overwhelming evidence to the contrary, LightSquared continues to assert that GPS receivers impermissibly "listen" into LightSquared's spectrum; that, as a result, they are not entitled to any interference protection; and that it should be permitted to provide terrestrial service despite the impact on GPS receivers.^{55/} The GPS industry has demonstrated on countless occasions that these assertions are simply false. Commercial GPS receivers have long been designed with the latest technologies, including highly advanced filtering solutions that are designed to resist noise from signals tens of thousands or even millions of times more powerful

^{53/} *Id.*

^{54/} *See generally* 2 GHz NPRM.

^{55/} *See* LightSquared Comments at 16-18, 50-52; *see also* Comments of the Computer & Communications Industry Association, Docket No. 11-109, at 3 (filed March 16, 2012) ("CCIA Comments").

than the GPS signal from space.^{56/} In fact, the most sensitive precision GPS devices typically include at least five stages of state-of-the-art filtering technologies in order to resist outside signals and protect GPS operations.^{57/}

In addition, LightSquared argues that the GPS interference problems can be solved by “ensuring that GPS devices listen only in the bands allocated for GPS.”^{58/} However, LightSquared also acknowledges that certain high precision GPS receivers rely on signals transmitted in the MSS band in order to receive augmentation signals from LightSquared itself.^{59/} As previously explained by the Coalition, certain GPS receivers are designed to receive signals in the entire MSS band as required by LightSquared’s own contracts in order to provide highly accurate and critical positioning services.^{60/} Thus, these GPS devices necessarily must “listen” into the MSS band in order to perform as intended. LightSquared cannot claim that GPS devices must receive signals only in the bands allocated for GPS while also benefitting from its own contracts that require GPS receivers to listen across the entire MSS band and generate revenue for LightSquared through the provision of satellite capacity for these services.

LightSquared also argues that the interference problem is caused by “overload” of GPS receivers and therefore the issue is on the receiver side.^{61/} While the Coalition agrees that overload is a problem, GPS receivers were reasonably designed to operate within the generally quiet satellite bands, with limited ATC operations of the sort that the Commission originally

^{56/} See Coalition Opposition at 24; Reply Comments of the Coalition to Save Our GPS, Docket Nos. 11-109 & 10-142, at 12-13 (filed March 13, 2012) (“Coalition Petition Reply Comments”).

^{57/} See *id.*

^{58/} LightSquared Comments at 17.

^{59/} *Id.* at 53.

^{60/} See Coalition Opposition at 26; Coalition Petition Reply Comments at 12.

^{61/} See LightSquared Comments at 16-18, 46-50.

authorized, not to operate in the presence of a nationwide high-powered terrestrial network. Given that LightSquared was not previously authorized to operate such a service, it is absurd to suggest that GPS receivers should have been designed to accommodate an unauthorized use and an interference environment never contemplated by prior Commission decisions.^{62/} In any event, stating that the interference is caused by receiver overload does not cure the interference. Testing has shown that there is an embedded base of millions of GPS units in operation that will suffer interference if LightSquared's proposal is allowed to move forward. The Commission needs to uphold its long-standing commitment to protect GPS – whether the interference is caused by out-of-band emissions or overload. A long-term assessment of whether there are any effective measures that allow repurposing of mobile satellite spectrum and that allow benefits that exceed the costs awaits future proceedings. Today, the Bureau is correct in taking the actions it proposes, based on the outcome of the *Conditional Waiver Order's* interference resolution process, that LightSquared's proposed operations will cause harmful interference with GPS and that mitigation is not possible at this time.

Notwithstanding the fact that GPS receivers are properly designed and function precisely as intended, LightSquared argues that it cannot be held responsible for resolving interference concerns due to the GPS industry's "poor receiver design," citing the *AirTouch Decision* as support.^{63/} It also cites the *2003 ATC Decision* as an example of the Commission finding that MSS licensees should not be held responsible for resolving interference issues experienced by Personal Communications Service ("PCS") carriers because such carriers were aware of the potential for interference and there were mitigation solutions available.^{64/}

^{62/} *Id.* at 46-50.

^{63/} *See* LightSquared Comments at 73.

^{64/} *See id.* at 74.

As the Coalition previously demonstrated, LightSquared's reliance on these two decisions is misplaced. The *AirTouch Decision* is inapplicable to the instant case because it stands for the proposition that it is unnecessary to provide certain *additional* protections to GPS operations beyond those already in place, something the GPS industry is not requesting.^{65/} Moreover, in the *2003 ATC Decision*, the FCC's treatment of interference issues involving PCS actually contradicts LightSquared's assertions. While PCS carriers were aware of "potential interference from MSS systems in adjacent spectrum," the Commission noted that these carriers were aware of only a "minimal" potential for interference and found that "ATC may pose a greater interference problem for adjacent PCS operations" than previously anticipated.^{66/} It accordingly determined that "some additional requirements on ATC . . . [were] necessary and appropriate" and that the ATC operator is obligated to resolve any such interference.^{67/}

B. The FCC Has Made a Long-Standing Commitment To Protect GPS Regardless of Whether Such Devices Are Categorized under Part 15 or Part 25 of the Commission's Rules.

LightSquared also argues that GPS receivers, including GPS receivers designed to receive augmentation signals, are unlicensed and unregulated, and therefore are not entitled to any interference protections, permitting LightSquared to proceed regardless of the impact on GPS.^{68/} Regardless of whether GPS receivers are classified as unlicensed Part 15 or Part 25 devices, however, the Commission has made a long-standing commitment to protect GPS

^{65/} See Coalition Opposition at 30 (discussing that the FCC in the *AirTouch Decision* declined to adopt additional requirements to protect certain types of ground-based GPS receivers).

^{66/} See *id.* (citing *2003 ATC Decision* ¶ 118).

^{67/} See *id.* (citing *2003 ATC Decision* ¶ 118-19 ("[I]n the event that a PCS operator receives harmful interference from ancillary ATC base stations or mobile terminals, we will also require that the ATC operator [not the PCS carrier] must resolve any such interference.")). In addition, with respect to the *2003 ATC Decision*'s discussion regarding the potential for "overload" of PCS devices, the Commission stated that concerns regarding overload were minimal – very different from the concerns validated by the assessments of LightSquared's proposed operations. *Id.* ¶ 120.

^{68/} See LightSquared Comments at 18-23, 53-55.

operations and has expressly held that unlicensed devices are not devoid of any and all protections that are afforded to licensed devices.^{69/} The Commission, for instance, has determined that users and manufacturers of Part 15 devices are to be afforded regulatory certainty similar to manufacturers and users of licensed services.^{70/} Indeed, the FCC recently recognized that Part 15 devices are entitled to interference protections from licensed Location and Monitoring Services (“LMS”) and adopted a rule requiring LMS licensees “to demonstrate through actual field tests that their systems do not cause unacceptable levels of interference to Part 15 devices.”^{71/} Contrary to LightSquared’s assertions, these protections are commonplace and have not “wreak[ed] havoc on the Commission’s spectrum management policies.”^{72/}

The Coalition has provided additional examples where the Commission has emphasized the importance of unlicensed devices and implemented efforts to protect them.^{73/} LightSquared has either chosen to ignore them or, in some instances, has misinterpreted the Commission’s findings and the Coalition’s arguments.^{74/} For instance, in recent reply comments filed by LightSquared, LightSquared argues that the Coalition improperly relies on a 2005 Public Notice with respect to garage door openers because it “ignores that the Commission expressly put the burden of solving [the interference] problem on the manufacturers of the unlicensed garage door

^{69/} See Coalition Opposition at 12-13; Coalition Petition Reply Comments at 8-9.

^{70/} See Coalition Opposition at 16-17 (*citing Amendment of Part 90 of the Commission’s Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems*, Report and Order, 10 FCC Rcd 4695, ¶ 16 (1995)).

^{71/} Coalition Opposition at 16-17; *Request by Progeny LMS, LLC for Waiver of Certain Multilateration Location and Monitoring Service Rules*, Order, DA 11-2036, ¶ 29 (rel. Dec. 20, 2011).

^{72/} LightSquared Comments at 19.

^{73/} See Coalition Opposition at 16-18.

^{74/} See Reply Comments of LightSquared Inc., Docket Nos. 11-109 & 10-142, at 15-21 (filed March 13, 2012).

openers; the Commission declined to afford garage door openers ‘interference protection’ against the allocated use of the frequency band at issue.’”^{75/}

The Coalition, however, never asserted that the Commission found that unlicensed garage door openers were “entitled” to interference protections. The Coalition simply noted that the 2005 Public Notice demonstrated that unlicensed devices are not devoid of protection from the FCC. Indeed, the Commission expressly stated that it was “working with the garage door opener industry” to minimize the impact to consumers that were expected to receive interference.^{76/} If the Commission cared nothing for unlicensed devices, as LightSquared would have it believe, it never would have issued the 2005 Public Notice warning consumers about the potential for interference or made a commitment to work along with the garage door industry to minimize the interference impact. The Commission does not allow one service to completely destroy the operational existence of an entire class of unlicensed devices, regardless of their interference protection “rights,” without taking the unlicensed operations into consideration. To the contrary, the Commission has often touted the value of unlicensed devices, taken such devices into consideration when issuing rules and policies, and implemented actions indicating its long-term commitment to protecting such devices.^{77/}

Even where the Commission has treated GPS devices as unlicensed Part 25 receive-only earth stations, it has recognized that users of these devices are entitled to interference protection, regardless of whether the interference is caused by in-band or adjacent-band operations. When the Commission adopted the optional licensing regime in the *1979 Decision* cited by

^{75/} See *id.* at 15.

^{76/} See *Consumers May Experience Interference to Their Garage Door Opener Controls Near Military Bases*, Public Notice, DA 05-424 (rel. Feb. 15, 2005).

^{77/} See Coalition Opposition at 16-18.

LightSquared, it specifically noted that user remedies and rights relating to interference protection would remain intact to the greatest extent possible.^{78/} The Commission has in no way indicated that Part 25 receive-only earth stations are not entitled to interference protection from interfering uses in adjacent spectrum bands.

Importantly, the unregulated and unlicensed environment in which GPS receivers operate has allowed manufacturers to design the innovative GPS devices on which many critical economic sectors and the federal government rely. This regime has no bearing on GPS protection rights. The fact remains that the Commission has never stated that GPS devices lack interference protections whether or not they are licensed and whether or not they are experiencing in-band or adjacent-band interference.^{79/}

In any event and regardless of whether receivers are regulated, the Commission has the authority and obligation to regulate transmitters – including those operated by LightSquared. Part of its regulation of transmitters includes the effects on other devices, including receivers operated under Part 15 and by the government. The fact remains that LightSquared’s proposed

^{78/} See *Regulation of Domestic Receive-Only Satellite Earth Stations*, First Report and Order, 74 F.C.C. 2d 205, ¶ 28 (1979) (eliminating only users’ right to file a petition to deny an earth station renewal application and the right to file a request for revocation of the license for any earth station opting out of the licensing regime).

^{79/} See Comments of Deere & Company, Docket No. 11-109, File No. SAT-MOD-20101118-00239, at 5 (filed March 16, 2012) (“Deere Comments”) (observing that “[t]he Commission has always recognized the need for terrestrial stations operating in the MSS L-band to protect against interference to GPS systems,” and “while the FCC elected not to micromanage construction of ATC systems and thus gave MSS licensees flexibility to decide precisely how to implement their networks, the FCC did not alter its directive that terrestrial MSS emissions would need to be ‘carefully controlled in order to avoid interfering with GPS receivers.’”) (internal citations omitted); see also Opposition of the U.S. GPS Industry Council to LightSquared, Inc. Petition for Declaratory Ruling, Docket Nos. 11-109 & 10-142, at 3 (filed Feb. 27, 2012) (“USGIC Petition Opposition”) (arguing that “it is not necessary for individual GPS receivers to be licensed in order to be protected from harmful interference” and that “[s]uggesting that destructive interference to these widely-deployed receiving devices is consistent with FCC rules is little different from suggesting that television or direct broadcast reception can be interfered with because TV receivers or DBS receive dishes are not individually licensed by the FCC”).

operations will cause devastating interference to GPS receivers and therefore must not be permitted.

LightSquared further argues that NTIA, federal spectrum users, and the GPS industry all agreed that out-of-band emissions limitations were to be “the sole and preferred means to protect GPS receivers.”^{80/} This assertion, however, as discussed in further detail above, is premised entirely on LightSquared’s inaccurate and faulty view of the history of this proceeding and the nature of its authorization. Neither NTIA, federal users nor the GPS industry agreed to LightSquared’s current plans for a high-powered terrestrial-only service and, indeed, could not have since it was never authorized. Thus, any agreement in establishing technical parameters governing LightSquared’s operations are not proof of acquiescence to LightSquared’s current business plan or evidence that out-of-band emissions limitations would be the sole means of protection for GPS.

Again, LightSquared’s parsing of largely irrelevant FCC decisions fails even cursory analysis. The “transmitters” that provide GPS signals consist of a constellation of government-owned satellites in which the federal government has invested over \$34 billion, just for the constellation itself.^{81/} These satellites transmit on frequencies expressly allocated for this purpose under long-standing spectrum allocations adopted by the Commission. Many of the receivers that would suffer interference from LightSquared’s proposed operations are owned and operated by the Department of Defense, not to mention many other critical agencies at all levels of government. Despite all this, LightSquared suggests that the Commission, in a series of

^{80/} LightSquared Comments at 90.

^{81/} See *Sustaining GPS for National Security: Hearing Before the Subcomm. on Strategic Forces of the H. Comm. on Armed Services*, 112th Cong. at 3 (Sept. 15, 2011) (written testimony of General William L. Shelton, Commander, Air Force Space Command) (“2011 Shelton Testimony”), available at http://armedservices.house.gov/index.cfm/files/serve?File_id=9043b110-61fa-45b9-a8ec-6c9f338981cc.

pronouncements in other contexts, has adopted a basic policy that these and other GPS receivers are not entitled to interference protection and that LightSquared has an established legal right to create massive interference to these receivers. This suggestion simply does not merit serious consideration.

C. FCC Rules Place the Obligation Squarely on LightSquared To Resolve Any Interference Caused to GPS.

As several parties agree, the Commission's rules place the obligation squarely on LightSquared to resolve any interference caused to GPS.^{82/} It does not, as LightSquared claims, merely set forth a dispute resolution process.^{83/} By its express language, which the Coalition has recited time and again, Section 25.255 states that "[i]f harmful interference is caused to other services by ancillary MSS ATC operations, either from ATC base stations or mobile terminals, the MSS ATC operator must resolve any such interference . . ."^{84/} This rule is clear and unequivocally places the responsibility on LightSquared to resolve any interference caused to GPS services at its own expense. No skewed interpretation by LightSquared can alter this fact. LightSquared's attempt to argue that this rule only sets forth a dispute resolution mechanism

^{82/} See, e.g., Coalition Petition Reply Comments at 9; Comments of the Association of Public-Safety Communications Officials-International, Inc., Docket Nos. 11-109 & 10-142, at 2 (filed Feb. 27, 2012) ("APCO Petition Comments") (citing Section 25.255 to support its assertion that "LightSquared has a regulatory obligation to correct interference that it causes to existing operations"); Comments of CTIA – The Wireless Association, Docket Nos. 11-109 & 10-142, at 2 (filed Feb. 27, 2012) ("Section 25.255 of the Commission's rules places full responsibility for any interference mitigation on the MSS/ATC licensee [LightSquared]."); Opposition of the U.S. GPS Industry Council to LightSquared, Inc. Petition for Declaratory Ruling, Docket Nos. 11-109 & 10-142, at 13 (filed Feb. 27, 2012) (citing *Spectrum and Service Rules for Ancillary Terrestrial Components in the 1.6/2.4 GHz Big LEO Bands*, Report and Order and Order Proposing Modification, 23 FCC Rcd 7210, ¶¶ 35, n.118; 36, n.119 (2008)) (asserting that the Commission itself has recognized that Section 25.255 imposes "an absolute obligation on the MSS/ATC operator to resolve any harmful interference to other services"); see also Comments of T-Mobile USA, Inc., Docket Nos. 11-109 & 10-142, at 7-8 (filed Feb. 27, 2012) ("The FCC's Part 25 Rules give LightSquared the duty to coordinate with existing services and the obligation to resolve harmful interference. LightSquared must comply with the FCC's rules and protect commercial GPS devices from interference.").

^{83/} See LightSquared Comments at 63-69.

^{84/} 47 C.F.R. § 25.255.

because it is titled “Procedures for resolving allegations of harmful interference” only reinforces and demonstrates the hollowness of its argument.^{85/}

LightSquared’s further assertion that the *2003 ATC Decision* supports its claim that Section 25.255 only affords protection from out-of-band emissions and does not provide any “overload” protection to GPS devices is also of no avail.^{86/} As previously explained by the Coalition, the FCC’s *2003 ATC Decision* broadly states that “[t]he ATC technical rules shall . . . protect systems operating in adjacent service allocations from interference,” and that, in recognizing that ATC operations should avoid interfering with GPS, the Commission would “continue to assess the appropriate interference protection levels for GPS.”^{87/} The wording of the rule refers only to “harmful” interference, and overload interference is as harmful as any other form. As elsewhere, LightSquared’s distinctions between permissible and impermissible interference are entirely of its own making, with no reference to any relevant precedent.

III. INDEPENDENT TESTING CONCLUSIVELY SHOWS THAT LIGHTSQUARED’S PROPOSED OPERATIONS WILL CAUSE HARMFUL INTERFERENCE TO A WIDE RANGE OF GPS DEVICES AND APPLICATIONS.

The record in this proceeding is clear. Independent testing by the Technical Working Group (“TWG”) and the National Space-Based Positioning, Navigation, and Timing Systems Engineering Forum (“NPEF”), as reported by NTIA, has confirmed that LightSquared’s proposed operations will cause devastating interference to a wide range of GPS devices and applications, and that there are no viable mitigation solutions.^{88/} As the *NTIA Letter* reports,

^{85/} LightSquared Comments at 63.

^{86/} *Id.* at 65-67.

^{87/} Coalition Opposition at 23 (*citing 2003 ATC Decision* ¶¶ 109, 124-26).

^{88/} *See, e.g.*, Comments of Lockheed Martin Corporation, Docket No. 11-109, at 2 (filed March 16, 2012) (“Lockheed Comments”) (“[T]he TWG Report concluded that LightSquared’s proposed terrestrial mobile broadband operations will cause harmful interference to GPS receivers and applications.”); Deere

“[b]ased on NTIA’s independent evaluation of the testing and analysis performed over the last several months, we conclude that LightSquared’s proposed mobile broadband network will impact GPS services and that there is no practical way to mitigate the potential interference at this time.”^{89/} LightSquared’s attempt to argue that the *NTIA Letter* reaches fundamentally different conclusions than the TWG test results in order to support its argument that LightSquared’s operations in the lower 10 MHz of its spectrum would “not adversely affect the performance of *over 99 percent* of GPS receivers” is inaccurate and misleading.^{90/}

A. LightSquared Mischaracterizes Both the TWG’s and NTIA’s Findings.

LightSquared attempts to mischaracterize the TWG’s and NPEF’s testing results to support its incorrect claims.^{91/}

1. Cellular Devices

LightSquared asserts that NPEF’s recent test results, as reported by NTIA, confirm the TWG’s conclusion that cellular GPS devices are compatible with LightSquared’s network.^{92/} As

Comments at 2 (“After a comprehensive testing and technical evaluation process most recently undertaken by the government, open and transparent to LightSquared, including LightSquared’s direct participation, and confirmed by peer review, the interference concerns regarding LightSquared’s proposed network have been scientifically and empirically validated, and LightSquared’s proposed mitigation solutions have been discredited or proven ineffective.”).

^{89/} *NTIA Letter* at 1.

^{90/} LightSquared Comments at 34-36, 89.

^{91/} See LightSquared Comments at 34-36 (arguing that the TWG’s test results showed that LightSquared’s operations in the lower 10 MHz of its spectrum would “not adversely affect the performance of *over 99 percent* of GPS receivers (including 100 percent of GPS-enabled mobile phones and general location and navigation devices)”; CCIA Comments at 7 (“[F]urther testing showed that over 99% of the devices, including 100% of GPS-enabled mobile phones and general location and navigation devices, experienced no meaningful interference from LightSquared’s transmissions in the lower 10 MHz of its spectrum.”).

^{92/} LightSquared Comments at 77-78.

the Coalition and several others have demonstrated, however, this is simply not true.^{93/} Indeed, as Deere observed, the TWG found that LightSquared signals “caused GPS failure for a significant number of the tested devices,” and, as reported by USGIC, NPEF’s tests demonstrate that “there are several types of cellular handsets (numbering at least a half dozen) that experienced disabling interference to GPS reception.”^{94/}

2. *Personal/General Navigation Devices*

The NPEF Report and other testing also correctly show, as discussed in further detail below, that harmful interference would be caused to personal/general navigation GPS receivers.^{95/} As Lockheed Martin observes, the NPEF Report concluded that “[n]o additional testing is required to determine that terrestrial high-power transmission in the [LightSquared MSS downlink] band impacts general navigation receivers.”^{96/}

3. *Aviation Devices*

LightSquared claims that the FAA’s Report on which NTIA relies regarding the effects from LightSquared’s network on aviation receivers is incomplete and that the FAA ceased further discussions with LightSquared regarding the matter.^{97/} LightSquared’s argument overlooks the fact that the FAA ceased discussions with LightSquared because testing

^{93/} See Coalition Comments at 8-10 (discussing the TWG’s and NTIA’s test results and noting that “neither provides convincing evidence that cellular devices will be unaffected by LightSquared’s operations”).

^{94/} Deere Comments at 7 (internal quotations omitted); USGIC Comments at 8-9.

^{95/} See Coalition Comments at 10-14.

^{96/} Lockheed Comments at 3 (internal quotations omitted) (*citing* National Space-Based Positioning, Navigation, and Timing Systems Engineering Forum, *Follow-on Assessment of LightSquared Ancillary Terrestrial Component Effects on GPS Receivers* (Jan. 6, 2012) (“NPEF Report”)); USGIC Comments at 3-6, 13; *see also* Deere Comments at 7 (noting that the TWG concluded that “all phases of the LightSquared deployment plan will result in widespread interference to GPS signals and service and that mitigation is not possible”) (internal quotations omitted).

^{97/} See LightSquared Comments at 82-84.

demonstrated a high likelihood of harmful interference to aviation GPS receivers that could not be mitigated. As the Coalition and others have explained, the FAA found that GPS receivers used in aviation applications, particularly GPS receivers used for low-altitude aviation operations, would not be compatible with LightSquared's operations and that there are no mitigation solutions that would ensure current levels of safety.^{98/}

4. *High Precision Devices*

Although LightSquared acknowledges that high precision GPS devices will experience harmful interference, it understates the number of affected devices while severely overstating the ability to mitigate such interference. It merely repeats press release statements, which have never been substantiated by reference to any data, to the effect that only “a relatively small number of high precision devices” will be adversely impacted.^{99/} LightSquared further argues that it has “demonstrated the viability of filter solutions to provide compatibility [of high precision devices] without adversely affecting performance, cost or size,” and that while the *NTIA Letter* indicates that further testing and analysis of these solutions needs to be done, NTIA has abruptly declined to do so.^{100/}

As is already well-documented, testing has conclusively demonstrated that significant harmful interference would result to high precision devices from LightSquared's network.^{101/} To

^{98/} See Coalition Comments at 14-17; USGIC Comments at 3-6 (“The FAA has correctly concluded that LightSquared's proposed terrestrial network is not compatible with low altitude operations dependent on GPS receivers built to these specifications.”); Lockheed Comments at 3-4 (noting that “the FAA concluded that terrestrial mobile service of any kind is unlikely in the LightSquared MSS bands”); see also Deere Comments at 2-5, 7.

^{99/} LightSquared Comments at 76 (“[T]he only potential incompatibility for existing GPS devices that has been identified in scientific testing and analysis concerns a relatively small number of high precision devices.”).

^{100/} *Id.* at 85-86.

^{101/} See Coalition Comments at 18-19; see also Deere Comments at 7 (“The High Precision, Timing and Networks Sub-team, co-chaired with Deere technical experts, found widespread harmful interference

the extent that LightSquared argues that viable filter solutions exist, it is telling that LightSquared has continued to make this claim without providing any additional support, aside from self-serving claims by vendors seeking to sell replacement gear.^{102/} Indeed, as the Coalition previously explained, filter technologies like the ones proposed by LightSquared have not been made available for testing across the full range of commercial, performance, and operating parameters, and even if they were made available, serious questions would remain with respect to their compatibility and whether they would degrade the performance of such devices.^{103/}

Further, in response to LightSquared's claim that there is no analysis to rebut LightSquared's evidence of viable mitigation solutions, it is important to note that since NTIA ultimately found that "LightSquared and the federal agencies have been unable to resolve the interference issues associated with personal/general navigation and aviation GPS receivers, there is no reason for federal agencies to undertake the expense and resource commitment to test high-precision and precision timing GPS receivers at this time."^{104/} Indeed, as USGIC notes, "[i]n light of the other adverse interference testing results, there is no point in continuing to pursue solutions to mitigate interference issues with respect to high-precision and timing GPS receivers that were identified in the TWG Report and not subject to further USG testing."^{105/}

'over long ranges,' determined that no mitigation technique is available for protecting the installed base of diverse receivers from LightSquared interference, and concluded that 'no currently available receiver, filter, antenna or other mitigation technology would enable the construction of *future* wideband High-Precision, Timing or Network GPS receivers and augmentation systems that are compatible' with LightSquared's proposed network deployment plan.").

^{102/} See, e.g., Letter from Javad Ashjaee, CEO, Javad GNSS, to the Honorable Julius Genachowski, Chairman, FCC, Docket No. 11-109 (filed Feb. 27, 2012).

^{103/} See Coalition Comments at 19-20.

^{104/} NTIA Letter at 6.

^{105/} USGIC Comments at 9 (adding that "[t]hese substantial interference issues were identified in the original TWG tests, and there has been no further data adduced to suggest that they can be successfully mitigated").

5. *Space-Based Devices*

Finally, contrary to LightSquared's assertion,^{106/} space-based GPS receivers have not been shown to be compatible with LightSquared's operations.^{107/} LightSquared acknowledges that NTIA found that the next generation of space-based receivers will need to be modified to be compatible with LightSquared's network in the lower 10 MHz.^{108/} However, it continues by noting that "NTIA does not suggest that any such modification would be impractical or has not been considered."^{109/} LightSquared fails to recognize that the TWG already concluded that space-based GPS receivers would "not benefit substantively" from its mitigation proposal to operate in the lower 10 MHz,^{110/} and, as discussed above, modifying GPS receivers to accommodate LightSquared's network simply raises too many questions and concerns for it to be a practical solution.

B. LightSquared's Assertions That the Testing Was Flawed and Biased Are Self-Serving, Entirely Uncorroborated, and Wrong.

LightSquared argues that the TWG's and NPEF's testing was flawed or biased.^{111/} In particular, LightSquared argues that NPEF's testing and conclusions with respect to personal/general navigation devices erred in at least two aspects – the "power on the ground" of LightSquared's base stations at a typical GPS receiver and the threshold for determining harmful

^{106/} LightSquared Comments at 86.

^{107/} See, e.g., USGIC Comments at 8 (asserting that with respect to space-based GPS applications, "NASA implementations of GPS would be subject to particularly adverse impact from widespread terrestrial deployment of high-power base stations due to their wider front-end filter bandwidths"); Deere Comments at 7 ("The Spaced Based Sub-team determined that interference from LightSquared to its receivers 'would be severely disruptive to NASA's science mission based on the test and analysis conducted in the TWG.'").

^{108/} See LightSquared Comments at 86.

^{109/} *Id.*

^{110/} Coalition Comments at 21.

^{111/} See LightSquared Comments at 37-38; see also CCIA Comments at 4-6.

interference.^{112/} LightSquared ignores that the government test methodology was reviewed and validated by two independent and respected national facilities.^{113/} Conversely, no independent credible source has come forward to support LightSquared’s baseless allegations.

With respect to its “power on the ground argument,” LightSquared argues that NPEF should have used LightSquared’s preferred propagation model – the Walfisch Ikegami Line of Sight (“WILOS”) model – rather than NTIA’s Irregular Terrain Model (“ITM”).^{114/} The GPS industry, however, has demonstrated on numerous occasions that a free-space path loss model similar to ITM provides a better interference analysis than WILOS.^{115/} LightSquared fails to understand the critical differences between cellular network planning and interference analysis, and thus has failed to adequately respond to these criticisms. LightSquared’s model fails to represent the worst case scenario.

LightSquared also argues that NPEF should have used its Height-Power Option to determine the power limit, rather than the -15 dBm limit derived from NTIA’s ITM.^{116/} Under LightSquared’s Height-Power Option and its revised analysis of the Las Vegas “Live Sky” data based on this model, however, the power level was found to exceed the -30 dBm limit in numerous places. Moreover, even degrading performance in a small percentage of the area around a LightSquared tower would be unacceptable since many GPS devices are used in critical safety-of-life applications. LightSquared’s compromise proposal to fix “hot spots” that could

^{112/} LightSquared Comments at 78-82.

^{113/} See NPEF Report at 3 (discussing that NPEF’s testing methodology and results were separately validated by two independent parties – Idaho National Labs and Massachusetts Institute of Technology Lincoln Laboratory).

^{114/} LightSquared Comments at 79, Technical Appendix, Exhibit A, at A 27, A-30-34.

^{115/} See, e.g., Trimble TWG Comments at 52, n. 141; Comments of Garmin International Inc., Docket No. 11-109, File No. SAT-MOD-20101118-00239, at 11-16 (filed Aug. 16, 2011).

^{116/} See LightSquared Comments at 79, Technical Appendix, Exhibit A, at A21-A34.

unintentionally exceed the -30 dBm limit after the fact are also meaningless in light of the risks that are at stake.

As explained by the Coalition numerous times, the 1 dB threshold is a widely and internationally accepted standard.^{117/} LightSquared alleges that a 1 dB reduction in the carrier-to-noise ratio would not result in a loss of performance.^{118/} This assertion is based only on its own interpretation of test data, which no credible party has corroborated. In any case, it is important to note that a 1 dB threshold is derived from multiple factors such as aggregate levels of interference and rise in the noise floor, which are important in characterizing overall interference levels since GPS receivers are often utilized in difficult environments such as indoors and in urban canyons. In these instances, a 1 dB degradation can matter greatly.

Despite LightSquared's accusations to the contrary, the NPEF's testing methods and results are not flawed or biased. Indeed, as explained by General William Shelton, NPEF's testing was led by Captain Justin Deifel of SMC's GPS System Program Office, whose expertise, "technical prowess and objectivity" in reviewing the potential for interference to military and civilian GPS users from LightSquared's network "ensured [that] these nationally significant tests were professionally accomplished in a thorough, fact-based manner."^{119/}

^{117/} See Coalition Comments at 13-14; Coalition TWG Comments at 26-27.

^{118/} LightSquared Comments at 80.

^{119/} *Department of the Air Force Presentation to the Subcommittee on Strategic Forces, Senate Armed Services Committee, United States Senate*, at 7 (March 21, 2012) (written testimony of General William L. Shelton, Commander, Air Force Space Command) ("2012 Shelton Testimony"), available at <http://www.airforce-magazine.com/SiteCollectionDocuments/Testimony/2012/March2012/032112shelton.pdf>.

IV. THE COMMISSION HAS AMPLE JUSTIFICATION TO VACATE THE *CONDITIONAL WAIVER ORDER* AND SUSPEND LIGHTSQUARED’S ATC AUTHORITY WITHOUT FURTHER DELAY.

A. The Proposed Actions Are Consistent with, and Adequately Address, the Concerns Raised by Recent Legislation and the *Conditional Waiver Order*.

As an initial matter, LightSquared asserts that “[n]othing in recent legislation permits, much less requires, the Bureau or the Commission to suspend LightSquared’s authority,” because the legislation is “expressly tethered to the *Conditional Waiver Order* and the terrestrial-only mobile user terminals that are the focus of that order.”^{120/} LightSquared’s characterization simply has no basis in the congressional mandates contained in the legislation. Rather than addressing only “terrestrial-only mobile user terminals” as LightSquared contends, the 2012 Consolidated Appropriations Act prevents the Commission from allowing LightSquared to proceed with its proposed terrestrial network “until the Commission has resolved concerns of potential widespread harmful interference by such commercial terrestrial operations to commercially available [GPS] devices,” while the National Defense Authorization Act contains equivalent language protecting military GPS devices.^{121/} The condition imposed by the *Conditional Waiver Order* similarly requires LightSquared to show that its proposed operations will not interfere with GPS before LightSquared can be cleared for commercial operations.^{122/} The legislation and the *Conditional Waiver Order* reflect Congress and the Bureau’s concern that LightSquared’s proposed terrestrial network would harmfully interfere with GPS and require resolution of this issue prior to LightSquared’s commencement of commercial operations. The Bureau’s proposed actions are consistent with this concern and squarely resolve the specific problem posed by LightSquared’s proposal.

^{120/} LightSquared Comments at 121; *see also* Comments of Leap Wireless International, Inc. and Cricket Communications, Inc., Docket No. 11-109, at 3 (filed March 13, 2012) (“Leap Comments”)

B. The Record Provides Conclusive Evidence Justifying Adoption of the Commission’s Proposed Actions.

Nearly every party involved in these proceedings agrees that the Bureau is justified in vacating the *Conditional Waiver Order* and suspending indefinitely LightSquared’s ATC authority.^{123/} NTIA has concluded that “LightSquared’s proposed mobile broadband network will impact GPS services and that there is no practical way to mitigate potential interference at this time.”^{124/} The Bureau likewise has tentatively concluded that the interference resolution process “has not been successfully completed and harmful interference concerns have not been resolved,” and therefore “it is highly unlikely that LightSquared will, in any reasonable period of time, be able to satisfy the requirements of the *Conditional Waiver Order* for providing commercial ATC service in the 1525-1559 MHz band.”^{125/} As a result, “LightSquared has not satisfied the express prerequisite established by the FCC in the *Conditional Waiver Order* for the commercial operation of terrestrial network facilities in L-band [MSS] spectrum,” and

(arguing that the Commission’s proposed actions are not necessary under the 2012 Consolidated Appropriations Act).

^{121/} Consolidated Appropriations Act, 2012, Pub. L. No. 112-74, at Division C – Financial Services and General Government Appropriations Act, 2012 (enacted Dec. 23, 2011); National Defense Authorization Act for Fiscal Year 2012, H.R. 1540, 112th Cong., § 911(a) (enacted Dec. 31, 2011) (recognizing the impact on government GPS use by forbidding the FCC from approving operations of LightSquared’s terrestrial wireless network until the FCC has resolved concerns of widespread interference to military GPS devices).

^{122/} *Conditional Waiver Order* ¶¶ 41-42.

^{123/} See, e.g., USGIC Comments at 11 (“LightSquared has failed to meet in a timely manner the critical condition of the *Conditional Waiver Order*, as affirmatively enacted into law by the recent statutory requirements, and its conditional authority should be rescinded as the Bureau proposes.”); Lockheed Comments at 5 (“The proposal to vacate the [*Conditional*] *Waiver Order* is both appropriate and fully justified.”); Comments of Aviation Spectrum Resources, IB Docket No. 11-109, at 4 (filed March 16, 2012) (“ASRI Comments”) (“ASRI urges the Commission to move promptly to vacate the waiver as NTIA has now concluded that the interference concerns in the waiver cannot be addressed satisfactorily within any reasonable timeframe.”); Coalition Comments at 23 (“[T]he Coalition urges the Bureau to provide much-needed certainty to the nation’s millions of GPS users by taking immediate action to adopt its proposal to vacate the *Conditional Waiver Order* . . .”).

^{124/} *NTIA Letter* at 1.

^{125/} *Public Notice* at 3-4.

consequently, “the Commission’s decision to vacate the conditional authority granted under the waiver order is both appropriate and necessary to protect the integrity of the United States GPS system and the hundreds of millions of government and commercial and individual civilian users that rely on GPS.”^{126/}

While LightSquared’s use of ATC as an ancillary, gap-filling service was not thought to pose a threat to GPS, it now appears that any significant terrestrial use of MSS L-Band spectrum is problematic. As the Coalition discussed in its initial comments, the Commission has broad discretion to modify FCC licenses at any time in furtherance of the public interest and an obligation to revisit its decisions when new evidence – such as that produced by the TWG and the supplemental testing – is presented.^{127/} Given that testing has shown incompatibility between ATC operations in the band and GPS, the vast majority of commenting parties agree that the Bureau should adopt its proposal to suspend LightSquared’s ATC authority until such concerns can be fully evaluated and until LightSquared can show that its operations will not interfere with GPS.^{128/} While LightSquared argues that the suspension of its ATC authority “is a dramatic change of course to the Commission’s historic approach to ATC implementation,”^{129/} the Coalition agrees with USGIC that “rescission of the authority granted in the *Conditional Waiver*

^{126/} Deere Comments at 2.

^{127/} See Coalition Comments at 28-31.

^{128/} See Deere Comments at 5-6 (“Given that ATC base station emissions as contemplated by LightSquared in the 1525-1559 MHz band and even in a ‘Low 10 MHz’ configuration, have proven in comprehensive testing to be incompatible with GPS and GNSS receivers, Deere supports the indefinite suspension of L-band ATC authority.”); ASRI Comments at 4 (“ASRI also urges the Commission to move forward with the modification of LightSquared’s [ATC] authority in accordance with Section 316 of the Communications Act. Specifically, consistent with the *NTIA Letter*, the Commission should suspend LightSquared’s ATC authority . . .”); USGIC Comments at 11 (“The Commission should adopt its proposal to suspend indefinitely LightSquared’s underlying L-Band MSS ATC authority, to the extent consistent with the *NTIA Letter*.”); Lockheed Comments at 5 (“With respect to the Commission’s proposal to suspend indefinitely LightSquared’s ATC authority to the extent consistent with the *NTIA Letter*, Lockheed Martin agrees with the proposal.”).

^{129/} LightSquared Comments at 69-70.

Order is the only appropriate action in light of the data on interference developed through the Technical Working Group (‘TWG’) process and the confirming studies subsequently conducted at the direction of NTIA, which underpin the conclusions reached in the *NTIA Letter*.^{130/}

In response to the Bureau’s proposal, LightSquared asserts that “the International Bureau has no delegated authority to take the action proposed in the *Public Notice*.”^{131/} The Coalition recognizes, as does the Bureau, that the process required by Section 316 of the Communications Act, as amended, governing the modification of a Commission license must be observed.^{132/} However, that process can be informed by the Bureau’s analysis and conclusion. Accordingly, it is appropriate for the Bureau to conclude that LightSquared’s ATC authority should be suspended, pending completion of the processes required by Section 316 of the Communications Act. The Bureau, however, retains full authority to adopt its proposal to vacate the *Conditional Waiver Order*, without action by the full Commission.^{133/} The Bureau granted LightSquared the conditional waiver requiring LightSquared to show non-interference to GPS, and therefore can determine that this condition has not been met and vacate the *Conditional Waiver Order* consistent with its terms.

LightSquared attempts to prevent the Bureau from taking the actions proposed in the *Public Notice* by offering other arguments that are wholly without merit. For instance, LightSquared argues that the “*Public Notice* presents a false choice between the preservation of

^{130/} USGIC Comments at 3.

^{131/} LightSquared Comments at 74-75.

^{132/} 47 U.S.C. § 316; *see also Public Notice* at 4 n.20 (“We note that in the event we decide – after evaluating the public comment received in response to this Public Notice – to modify LightSquared’s license as envisioned herein, our order of modification would not become final until after LightSquared has been given an additional period of time to protest, pursuant to the requirements of Section 316(a).”).

^{133/} *See, e.g., ASRI Comments* at 4 (“The Commission need not – and should not – engage in any hearing pursuant to Section 316 . . . in order to vacate the waiver as a key condition precedent to the continuance of the waiver has now failed.”).

LightSquared's ATC authority, on the one hand, and the maintenance of GPS service, on the other, when both in fact can be accommodated.”^{134/} This statement is unsupported in the record. Rather, and as further discussed above, the FCC-mandated interference resolution process fully considered whether LightSquared's terrestrial operations and GPS could coexist and concluded that they cannot.

LightSquared's also suggests that the Commission “recognize clearly and emphatically LightSquared's superior spectrum rights in its licensed MSS/ATC Band vis-à-vis both commercial and government GPS user receivers.”^{135/} LightSquared does not have, and has never had, rights “superior” to GPS. In fact, LightSquared has stated the priority exactly backwards – its “right” to provide terrestrial-only service was expressly conditioned on non-interference to GPS. Since this issue was resolved in prior decisions and in the *Conditional Waiver Order*, there is no need for the FCC to further address the relative rights of GPS vis-à-vis a terrestrial network.

C. LightSquared's Proposed “Solutions” Are Unsupported in the Record and Merely Distract the Commission from Making the Finding That LightSquared's Proposed Operations Will Cause Devastating Interference to GPS.

LightSquared proposes a litany of ways in which it believes the Commission can “resolve” the GPS interference issue.^{136/} However, none of these “solutions” are supported by the extensive technical and legal record in this proceeding. Moreover, LightSquared's suggestions are based on the false premise that it is the FCC, not LightSquared itself, that must “solve” the interference that LightSquared will cause to GPS. In particular, LightSquared asserts that the Commission could adopt various suggestions contained in LightSquared's Petition for

^{134/} LightSquared Comments at 90; *see also id.* at 92 (arguing that LightSquared's lower 10 MHz proposal is “viable”).

^{135/} *Id.* at 91.

^{136/} *Id.* at 123.

Declaratory Ruling, including recognizing that GPS receivers are not entitled to interference protection, finding that any risk of “overload” is a function of faulty receiver design, or determining that the interference experienced by GPS receivers does not amount to “harmful interference.”^{137/} As comments submitted in response to LightSquared’s Petition show, these arguments amount to nothing more than an attempt to define away a massive problem of LightSquared’s own creation and evade its regulatory obligations.^{138/} There is no support for these creative interpretations of the *Conditional Waiver Order*. Try as LightSquared might, these definitional gymnastics cannot obscure the fact that LightSquared’s proposed operations will cause devastating interference to GPS and cannot be permitted under any responsible interpretation of the Commission’s fundamental public interest mandate.

LightSquared also argues that the Commission could “[c]onclude that the *potential* for ‘overload’ risk is not, in fact, present, or that any ‘overload’ effect is not ‘harmful’ or ‘widespread’” or could “[f]ind that any risk of ‘overload’ can be mitigated.”^{139/} However, the technical record entirely precludes such findings, as testing conclusively shows that

^{137/} *Id.*

^{138/} See, e.g., Coalition Petition Reply Comments at 2-5; Opposition of Deere & Company to LightSquared Inc. Petition for Declaratory Ruling, Docket Nos. 11-109 & 10-142, at 8-9 (filed Feb. 27, 2012) (“The Commission should resist LightSquared’s effort to sidetrack the Commission’s consideration of the principal issue – that LightSquared’s network will cause severe interference to GPS – by dragging all parties into a new debate about LightSquared’s current (and unsupportable) view that GPS companies should be prevented from requiring protections against harmful interference from LightSquared’s operations.”); Comments in Opposition of the Utilities Telecom Council, Docket Nos. 11-109 & 10-142, at 1 (filed Feb. 27, 2012) (“Clearly, LightSquared has been unable to meet the conditions of its waiver, and it is seeking to circumvent them through its Petition for Declaratory Ruling.”); Opposition to Petition for Declaratory Ruling of Lockheed Martin Corp., Docket Nos. 11-109 & 10-142, at 3 (filed Feb. 27, 2012) (“With the Petition, LightSquared appears to be trying to avoid its obligations under both the FCC’s rules and the specific requirements that the Commission imposed on LightSquared in the *[Conditional] Waiver Order* by arguing that RNSS receivers are not entitled to protection at all.”) (citations omitted); USGIC Petition Opposition at iii (“LightSquared’s Petition is simply an effort to alter its manifest obligations as a non-conforming spectrum user to protect other L-band services from harmful interference, obligations which it has previously recognized and affirmatively accepted.”); APCO Petition Comments at 2 (suggesting that LightSquared is attempting “to evade its regulatory obligations”).

^{139/} LightSquared Comments at 123.

LightSquared's proposed terrestrial operations would cause widespread harmful interference to a wide array of GPS devices and that mitigation is not possible at this time.

LightSquared's other "solutions" are similarly without merit. Finding that the GPS industry should be estopped from ensuring protection of GPS because it "repeatedly endorsed" LightSquared's operations is, as discussed above, a distortion of history based on selective quotations and ignores the substance of the relevant Commission decisions. As also discussed in detail above, any cooperation NTIA and the GPS community provided to LightSquared over time was based on the limited nature of LightSquared's ATC authorization.

Lastly, and as discussed in further detail below, any Commission inquiries regarding receiver performance cannot "resolve" this proceeding, as such inquiries fall outside of the rigorous process mandated by the *Conditional Waiver Order* to address interference issues in this instance. The Coalition urges the Bureau to reject each of these proposals as they are without merit and simply serve to delay or prevent the Bureau from the limited task before it – concluding that LightSquared has not met the conditions established by the *Conditional Waiver Order*.

D. Resolution of Issues Regarding Receiver Standards Is Not a Precondition to the Commission Taking the Actions It Proposes.

LightSquared accuses the Commission of "abandon[ing] midstream . . . the resolution process established by the [*Conditional Waiver Order*]." ^{140/} The *Conditional Waiver Order* dictated the specific manner in which GPS interference concerns would be resolved. Specifically, the *Conditional Waiver Order* required LightSquared to help organize and fully participate in the working group process and stated that this process "must be completed to the Commission's satisfaction before LightSquared commences offering commercial service

^{140/} *Id.* at 121.

pursuant to [the] waiver on its L-Band MSS frequencies.”^{141/} The *Conditional Waiver Order* mandated that the working group evaluate a variety of GPS devices and issue recommendations regarding how LightSquared’s proposed terrestrial services and GPS could coexist, and acknowledged the Commission’s long-standing obligation to consult with NTIA in making its determination regarding whether the non-interference condition had been met. Now that this process is almost complete and NTIA has concluded, and the Bureau has tentatively concluded, that LightSquared has failed to show that its proposed operations will not interfere with GPS, LightSquared argues that it is entitled to additional procedures in the form of the development of receiver standards for GPS devices.^{142/}

LightSquared has been afforded an extraordinary opportunity to demonstrate that its operations will not interfere with GPS, and it has failed to do so at every turn. In the process, GPS manufacturers and government GPS users have devoted massive resources to this effort and there is simply no justification for consuming more resources in this endeavor. It is time for the Commission to act.

While the outcome of the Commission’s further inquiries may eventually shed additional light on the kinds of terrestrial operations that might be permitted in the MSS L-Band, and the overall costs and benefits of permitting such operations, these inquiries are not a part of the specific interference resolution process delineated by the Bureau in the *Conditional Waiver Order*, and therefore cannot be used to further delay or prevent the Bureau from concluding the

^{141/} *Conditional Waiver Order* ¶¶ 41-42.

^{142/} LightSquared Comments at 71 (“LightSquared has formally requested that the Commission initiate a proceeding to consider the adoption of [receiver] standards for GPS devices, and the Commission has taken an affirmative step forward in this regard by holding a two-day workshop on receiver standards. In other words, the Commission has identified a clear path forward, LightSquared has provided a vehicle for proceeding along that path, and the *Public Notice* suddenly and without justification proposes to proceed in an entirely different direction that would undermine the Commission’s broader objectives.”).

evaluation of LightSquared’s proposal and taking the actions proposed in the *Public Notice*. If LightSquared objected to the interference resolution process established by the *Conditional Waiver Order*, it should have challenged it at that time, not at the conclusion of the process simply because it does not like its outcome.

While further Commission consideration of inquiries regarding receiver performance and interference protection standards cannot be used to delay the outcome of this proceeding, the Coalition nevertheless recognizes the importance of ensuring that spectrum is used efficiently and supports federal agencies’ efforts – as long as they are exercised under valid authority – to study receiver-related issues.^{143/} Such efforts, however, are only beginning and should not be a precondition to ruling on whether LightSquared has satisfied the non-interference condition set forth in *Conditional Waiver Order*. In fact, Congress has spoken to the issue by mandating a year-long study of these issues by the Government Accountability Office, which will provide critical input that must inform further Commission proceedings in this area.^{144/} While the Coalition and other involved parties stand ready to assist and provide their full cooperation in

^{143/} Coalition Comments at 31-33 (explaining federal agencies’ plans to study receiver performance). The Coalition notes that before the Commission determines to proceed with imposing receiver standards, it must determine whether it has authority to do so; the Coalition questions whether clear authority exists under the Communications Act. *See, e.g., Interference Immunity Specifications for Radio Receivers, et al.*, Notice of Inquiry, 18 FCC Rcd 6039, ¶ 22 (2003) (requesting comment on whether the Commission “has the necessary statutory authority to promulgate receiver immunity guidelines and standards”) (proceeding terminated without decision in *Interference Immunity Specifications for Radio Receivers*, Order, 22 FCC Rcd 8941 (2007)); *Spectrum Policy Task Force*, Report, Docket No. 02-135, at 31 (2002) (recommending the enactment of “legislation more explicitly granting . . . authority” to the FCC to promulgate receiver performance standards prior to the Commission’s adoption of such standards); *Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communication Requirements Through the Year 2010; Establishment of Rules and Requirements for Priority Access Service*, Second Notice of Proposed Rulemaking, 12 FCC Rcd 17706, ¶ 71 (1997) (“We observe that the Commission’s authority to regulate receiver performance may be limited.”). As further discussed in the Coalition’s initial comments, other mechanisms – such as interference protection criteria – may be more effective than receiver standards at enhancing spectrum use. *See* Coalition Comments at 33 n.116.

^{144/} Middle Class Tax Relief and Job Creation Act of 2012, H.R. 3630, 112th Cong. § 6408 (2012).

relation to these efforts,^{145/} the Coalition believes that such studies may affirm the Commission’s prior conclusion that receiver performance is a matter “best left to the market.”^{146/} In the interim, however, the Bureau must provide much-needed regulatory certainty to all concerned, including LightSquared, its lenders, and investors, as well as GPS users – and prevent the expenditure of any additional private or taxpayer dollars – by adopting the conclusions proposed in the *Public Notice*.^{147/}

E. Besides Issuing a Decision Regarding Whether LightSquared Has Met the Non-Interference Condition, the Commission Has No Further Obligation to LightSquared.

LightSquared states that if the Commission acts to protect GPS, “then the history, equities, and degree of investment and reliance by LightSquared – as well as the Commission’s legal responsibilities – demand that the Commission, working with LightSquared and NTIA, identify and engineer a partial or total exchange of alternative terrestrial spectrum rights, which could be used without any impact on existing GPS receivers.”^{148/} RCA similarly requests that

^{145/} See, e.g., Deere Comments at 6 (“Deere is committed to working with the Commission and other spectrum stakeholders on spectrum issues relevant to GPS, and continues to support Commission efforts to improve spectrum efficiency, provided that such initiatives do not degrade the performance of GPS and future GNSS receivers and constellation signals. . . . Deere looks forward to further contributing to the Commission’s analysis and consideration of relevant spectrum-related matters in the future.”).

^{146/} See, e.g., *Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Communications Requirements Through the Year 2010, et al.*, Fourth Notice of Proposed Rulemaking, 15 FCC Rcd 16899, ¶ 57 (2000); *Development of Operational, Technical and Spectrum Requirements for Meeting Federal, State and Local Public Safety Agency Communications Requirements Through the Year 2010, et al.*, Second Notice of Proposed Rulemaking and Order, 12 FCC Rcd 17706, ¶ 71 (1997) (“In the past, we have generally relied on the market to address receiver standards.”).

^{147/} See, e.g., ASRI Comments at 5 (“[G]iven the protracted and expensive exercise that the federal government and industry have gone through in consideration of LightSquared’s currently proposed ATC operations, the taxpayers should not bear the cost of any further investigation into the feasibility of interference-free operation of ATC systems in spectrum near that employed for GPS. Instead, the proponent of such operations should shoulder the burden of any such testing and analysis by the government.”).

^{148/} LightSquared Comments at 93.

“[i]n light of LightSquared’s significant investment . . . the FCC should work with the company to identify suitable spectrum for its planned 4G network.”^{149/} Contrary to these contentions, the Commission has no obligation to come up with an alternative for LightSquared. LightSquared sought to provide a service that its authorization did not support – a nationwide terrestrial network – and gambled that it could convince the FCC that it should be able to provide that service. It lost that gamble and the Commission has no obligation to bail it out. The Commission should vigorously pursue its goal of making additional wireless broadband spectrum available, but it has no obligation to ensure that a particular private party participates in this process. As others in these proceedings have repeatedly pointed out, Commission policy has always been clear that investments by a private party dependent upon future Commission action are entirely at that party’s own risk.^{150/} LightSquared and its owners are no exception to this rule.

^{149/} RCA Comments at 6-7; *see also* Leap Comments at 3 (“Leap urges the Commission to work [] towards a compromise solution that will continue to promote investment in, and the expeditious deployment of, LightSquared’s network.”).

^{150/} *See, e.g.*, USGIC TWG Comments at 46 (“The Commission must also reject all efforts by LightSquared to leverage its expenditures to date into an obligation by the Commission to act in its favor. Indeed, the Commission should make emphatically clear . . . that all LightSquared expenditures . . . have been and will be at LightSquared’s exclusive risk . . . This type of condition is standard in satellite licensing actions that are taken while a major technical or regulatory issue remains unresolved.”); Reply Comments of the Coalition to Save Our GPS, IB Docket No. 11-109, at 17 (filed Aug. 15, 2011) (“Coalition TWG Reply Comments”) (“LightSquared is responsible for all costs related to its proposed terrestrial broadband service, and any unwise investments on LightSquared’s part cannot be factored into the Commission’s decision-making process.”); Trimble TWG Comments at x (“Certainly the Commission should not view prior investments, undertaken at LightSquared’s own risk, as equities entitling it to any special accommodation or treatment.”).

V. FAILURE TO VACATE THE *CONDITIONAL WAIVER ORDER* AND SUSPEND LIGHTSQUARED’S ATC AUTHORITY WOULD CAUSE GREAT HARM TO THE PUBLIC INTEREST.

A. LightSquared Fails To Account for the Significant Benefits Already Being Delivered to the U.S. Population by GPS.

Although the Coalition fully recognizes the importance of broadband services and agrees with others that there is a need for additional wireless capacity,^{151/} these services should not come at the expense of an important public asset such as GPS. Unfortunately, LightSquared overlooks the strong public interest considerations in preserving GPS and fails to account for the significant benefits already being delivered to the U.S. population by GPS devices.

GPS delivers benefits to every sector of the nation’s economy and to nearly every business and consumer on a daily basis. As explained by the Aerospace Industries Association, “there is no question that American commerce, national security, scientific missions and safety services rightly depend on this reliable product.”^{152/} In the aviation sector, Aviation Spectrum Resources notes that “GPS plays a critical and increasingly essential role in the safe and efficient operation of aircraft.”^{153/} In the farming sector, as reported by the Illinois Farm Bureau, GPS applications “have yielded revolutionary benefits including giving farmers the ability to measure and map their fields with precision and develop useful databases, the ability to apply nitrogen, pesticides and herbicides over their fields and crops precisely, the ability to see and react to the production variability in their fields, and the ease and precision of auto-steer technology in

^{151/} See, e.g., LightSquared Comments at 96-98; CCIA Comments at 10-16; RCA Comments at 2-5; Leap Comments at 1-2.

^{152/} Letter from Daniel K. Elwell, Vice-President, Civil Aviation Aerospace Industries Association, to the Honorable Julius Genachowski, Chairman, FCC, Docket No. 11-109, at 1 (filed March 16, 2012) (“AIA Comments”) (adding that “[b]eyond GPS receivers used for navigation, GPS is used as a precision timing standard for many critical applications including terrestrial cellular (wireless) networks”).

^{153/} ASRI Comments at 2; AIA Comments at 1 (asserting that “GPS will be a key element of future aviation systems, providing precise aircraft positioning information to pilots and air traffic personnel for airspace management”).

tractors, combines and other implements of husbandry.”^{154/} GPS is not, as some parties suggest, simply a “gadget.”^{155/} Indeed, General Shelton recently noted that “[i]t is difficult to overstate the impact of GPS on the world. On-line banking, vehicle navigation systems, precision farming, cellular phone location for emergency purposes, precise military operations – these are all enabled by GPS.”^{156/} In its attempt to have the FCC bail it out, LightSquared fails to acknowledge the real public interest in this case – the preservation of an existing and critical component of our nation’s economy.

B. The Negative Economic Effects Caused by Rejection of LightSquared’s Proposal Are Much Less Than the Negative Effects That Would Be Caused by the Commission Allowing LightSquared To Interfere with GPS.

LightSquared argues that, in addition to the billions of dollars that it and others have allegedly spent on its proposed network, suspending LightSquared’s operations would have serious negative economic effects, including limiting wireless competition and stifling the creation of jobs.^{157/} LightSquared’s contention must be rejected for at least two reasons. *First*, it is premised on LightSquared’s erroneous assertions, fully addressed above, that it had the authority to provide the type of service that has been shown to cause interference to GPS and

^{154/} Letter from the Illinois Farm Bureau, to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109, at 1 (filed March 16, 2012); *see also* Letter from Kevin Paap, President, Minnesota Farm Bureau Federation, to Marlene H. Dortch, Secretary, FCC, Docket No. 11-109, at 1 (filed March 15, 2012) (“Precision agriculture using GPS allows farmers and ranchers to run efficient, economical and environmentally conscious operations. Farmers use GPS for accurate mapping of field boundaries, roads and irrigation systems; precision planting; and targeting the application of fertilizer and chemicals that combat weeds and crop diseases.”); Letter from Scott VanderWal, President, South Dakota Farm Bureau Federation, Docket No. 11-109, at 1 (filed March 5, 2012) (noting that “[r]ural emergency services rely on accurate GPS information to be able to respond quickly in emergency situations” and farmers rely on GPS for “accurate mapping of fields and targeted application of inputs[, which] will become even more critical in the future as we work to feed a growing world population on fewer acres of land”).

^{155/} Letter from Frank Niceley, Chairman, House Agriculture Committee of the Tennessee House of Representatives, to the Honorable Julius Genachowski, Chairman, FCC, Docket No. 11-109, at 1-2 (March 16, 2012).

^{156/} 2012 Shelton Testimony at 6.

^{157/} LightSquared Comments at 96-98.

which therefore cannot be authorized. The fact that LightSquared spent billions of dollars on a bad bet – and invested at its own risk – is no reason for the FCC to permit interference to GPS. Similarly, LightSquared cannot now claim that jobs will be lost for a venture that was never authorized.

Second, LightSquared completely ignores the negative effects that would result from the Commission allowing LightSquared to proceed and to interfere with GPS. Many industries that are critical to the U.S. economy and that support over three million jobs, such as aviation, agriculture, transportation, construction, and engineering and surveying, would be severely impacted by LightSquared's network.^{158/}

LightSquared also claims that revoking its authorization would result in a number of long-term adverse effects, such as “distort[ing] future reallocations of radio spectrum and limit[ing] further investment in new spectrum related services.”^{159/} To support these claims, LightSquared cites a study prepared by Dr. Coleman Bazelon.^{160/} There is simply no credible evidence to support Dr. Bazelon's conclusion that adoption of the actions proposed in the *Public Notice* would chill investment. To the contrary, after it was evident that LightSquared was unable to meet its regulatory obligations pursuant to the *Conditional Waiver Order*, Verizon Wireless announced its intent to acquire several Advanced Wireless Services licenses from

^{158/} See, e.g., Coalition TWG Reply Comments at 9-11 (reporting that “[i]n the agriculture sector, . . . GPS technology is responsible for nearly \$20 billion in additional farm revenues, which represents nearly 12 percent of overall U.S. crop revenue” and that “[i]n the aviation sector, the FAA estimates that loss of GPS service to general aviation would cost \$440 million per year, in addition to hundreds of lives”); Nam D. Pham, Ph.D., *The Economic Benefits of Commercial GPS Use in the U.S. and the Costs of Potential Disruption*, NDP Consulting, at 1 (June 2011) (“*NDP Study*”) (“[T]here are more than 3.3 million jobs that rely on GPS technology.”). A copy of the *NDP Study* was attached as Exhibit A to the comments submitted in this proceeding on August 1, 2011 by Trimble Navigation Limited. See Trimble TWG Comments at Exhibit A.

^{159/} LightSquared Comments at 100 (citing an economic analysis prepared by Dr. Coleman Bazelon) (internal quotations omitted).

^{160/} See *id.* at Exhibit 6.

SpectrumCo and Cox TMI Wireless, LLC,^{161/} with a combined value of approximately \$4 billion.^{162/} Clearly, the market has correctly recognized that this proceeding is not about the FCC stripping rights from LightSquared – rights that it never had. It is about LightSquared losing a gamble it took at the FCC that it could convert MSS spectrum into terrestrial spectrum. It is not the Commission’s job to rescue LightSquared from the investments it made in its flawed business plan.

Instead of completing the regulatory approval process before making any investments, LightSquared chose to acquire spectrum at discounted prices,^{163/} in the hope that it could convince the Commission to change its long-standing decisions and approve its terrestrial operations. While promoting investment is important, the Commission should not encourage parties to make risky investments based on the belief that they can persuade the Commission to abandon established rules and policies. The Commission should deter such behavior and make clear that if parties proceed with investments based on this premise, they do so at their own risk.

^{161/} See Application of Celco Partnership d/b/a Verizon Wireless and SpectrumCo LLC for Consent to Assign Licenses, ULS File No. 0004993617 (filed Dec. 16, 2011); Application of Celco Partnership d/b/a Verizon Wireless and Cox TMI Wireless, LLC for Consent to Assign Licenses, ULS File No. 0004996680 (filed Dec. 21, 2011).

^{162/} See Ira Teinowitz, *Verizon Spectrum Deals Spark Criticism*, THE DEAL PIPELINE, March 22, 2012, available at <http://www.thedeal.com/content/regulatory/verizon-spectrum-deals-spark-criticism.php> (reporting that the two deals involve \$4 billion worth of advanced wireless spectrum); John Eggerton, *Comcast, Verizon Execs Bill Deal as Value Added for Consumers; Opponents Say Deal Will Lead to Wireless Duopoly*, BROADCASTING & CABLE, March 21, 2012, available at http://www.broadcastingcable.com/article/482157-Cable_Spectrum_Deal_Gets_Hill_Hearing.php (“Verizon is offering \$3.6 billion for the SpectrumCo holdings and \$325 million for Cox’s spectrum, subject to FCC approval.”); Rachelle Dragani, *Congressional Hearing Pits Small Fries Against Comm Giants on Spectrum Buy*, TECHNEWSWORLD, March 22, 2012, available at <http://www.technewsworld.com/story/74699.html> (noting Verizon’s plan to purchase \$3.6 billion worth of spectrum from SpectrumCo); Stacey Higginbotham, *Verizon to Buy Cox Spectrum to Remake Its Broadband Model*, GIGAOM, Dec. 16, 2011, available at <http://gigaom.com/broadband/verizon-to-buy-cox-spectrum-to-remake-its-broadband-model/> (“Verizon Wireless has agreed to purchase some of Cox Communications’ wireless spectrum in a deal valued at \$315 million.”).

^{163/} See *supra* Section I.B (discussing that LightSquared obtained its spectrum for free and now estimates that it would be worth \$12 billion if it can be used for unrestricted terrestrial services).

If the Commission holds otherwise, not only would it generally encourage behavior contrary to regulatory policies and the public interest, but in this instance it would enable LightSquared to acquire spectrum that is worth billions of dollars more than it paid for it, resulting in an unjustified windfall at the expense of U.S. taxpayers.

While the benefits of GPS to the nation are clear, a comparative analysis of GPS services and LightSquared's proposed services are nonetheless beside the point. The *Conditional Waiver Order* expressly conditioned LightSquared's ability to operate its terrestrial network on its ability to demonstrate that it would not cause harmful interference to GPS operations. The only issue in this proceeding, which is narrower than LightSquared presents it, is the evaluation of the potential negative impact on GPS. Since LightSquared has failed to resolve this issue, it cannot be permitted to proceed.

C. The Proposed Actions Would Not Have “Grave” Long-Term Effects on U.S. Spectrum Policy as LightSquared Contends.

Further, the proposed actions would not have “grave” long-term effects on U.S. spectrum policy, as LightSquared and others contend.^{164/} LightSquared's proposition is entirely based on the faulty premise that LightSquared already had the authority to build a stand-alone, ubiquitous terrestrial network. “[P]recluding the use of the MSS/ATC Band for its intended purpose” and allowing a GPS user “to extend its ‘listening’ activities into *any* adjacent band,” as LightSquared asserts,^{165/} would not raise the spectrum policy concerns it claims because the Commission never intended to allow LightSquared to utilize its authorization to provide the terrestrial services it proposes.

^{164/} See LightSquared Comments at 102-05; CCIA Comments at 2.

^{165/} LightSquared Comments at 102.

To the contrary, if the Commission fails to take the proposed actions, it will destroy and deter investment in spectrum-related activities. As discussed above, GPS is a critical national asset, representing tens of billions of dollars of taxpayer and industry investment. In addition, it provides a platform for continued innovation, which has in turn led to continued investment.^{166/} However, existing and future investments will be jeopardized if the Commission finds that, in the face of overwhelming technical evidence showing harmful interference to GPS operations, LightSquared should be permitted to proceed, shifting the costs of accommodating LightSquared's network to private industries, taxpayers, and consumers. Such a result, and not the relief that LightSquared seeks, would discourage investment in spectrum-related enterprises in the future due to the unpredictability of Commission policies and the regulatory regime.

VI. THE PROPOSED ACTIONS WOULD NOT VIOLATE EXISTING LAW.

Contrary to LightSquared's assertions, adoption of the Bureau's proposals to vacate the *Conditional Waiver Order* and suspend indefinitely LightSquared's ATC authority would not violate the Administrative Procedure Act ("APA"), impact LightSquared's contractual rights, amount to an unconstitutional taking, violate the Due Process Clause, or contravene the Equal Protection Clause or Bill of Attainder Clause.

A. The Proposed Actions Would Not Violate the Administrative Procedure Act.

LightSquared makes the remarkable claim that the Bureau's proposal to abide by the process it clearly outlined and the condition it expressly stated in the *Conditional Waiver Order* would constitute "an extraordinary arbitrary and capricious agency action that cannot be squared with the most basic requirements of the Administrative Procedure Act."^{167/} What LightSquared

^{166/} See 2011 Shelton Testimony at 3 (noting that "[t]he innovative uses of GPS are [] interwoven into a wide array of civil and commercial sector applications").

^{167/} LightSquared Comments at 105.

describes as a “sudden reversal” in the Bureau’s position is actually the natural and reasonable outcome of the lengthy procedural journey specifically contemplated in the *Conditional Waiver Order*,^{168/} and the Bureau’s actions in this matter have more than satisfied the APA’s requirements.

1. *The Arbitrary and Capricious Standard of Review Is Extremely Narrow, and the Bureau Has More Than Satisfied the APA’s Procedural Requirements.*

The APA, “which sets forth the full extent of judicial authority to review executive agency action for procedural correctness,” permits a court to set aside agency action only when that action is arbitrary and capricious.^{169/} The arbitrary and capricious standard of review is extremely narrow, requiring only that an agency “examine the relevant data and articulate a satisfactory explanation for its action.”^{170/} The Supreme Court has found no basis in the APA for a requirement that agency change be subjected to more stringent review.^{171/} It has “neither held nor implied that every agency action representing a policy change must be justified by reasons more substantial than those required to adopt a policy in the first instance.”^{172/}

Indeed, the bar for overturning agency action under the APA is extraordinarily high. As the Supreme Court noted, an agency need only show that there are good reasons for a new policy, but “it need not demonstrate to a court’s satisfaction that the reasons for the new policy are *better* than the reasons for the old one; it suffices that the new policy is permissible under the

^{168/} *Id.*

^{169/} *FCC v. Fox Television Stations, Inc.*, 129 S.Ct. 1800, 1810 (2009).

^{170/} *Id.* (citing *Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Automobile Ins. Co.*, 463 U.S. 29, 43 (1983)); see also *People of California v. FCC*, 905 F.2d 1217, 1230 (9th Cir. 1990) (“The scope of review under this standard is a narrow one: we are not to substitute our judgment for that of the Commission in making policy choices as to how to carry out its statutory mission.”).

^{171/} *Id.*

^{172/} *Id.*

statute, that there are good reasons for it, and that the agency *believes* it to be better, which the conscious change of course adequately indicates.”^{173/} While the Commission’s discretion is not boundless, the court need only satisfy itself that the agency examined the relevant data and articulated a satisfactory explanation for its action based upon the record.^{174/} An agency action is only in violation of the APA if the agency has “failed to consider an important aspect of the problem” or has “offered an explanation for its decision that runs counter to the evidence before the agency.”^{175/} The Bureau has more than satisfied this requirement here, having articulated clearly its concerns over interference to GPS receivers and having engaged in an extensive testing process to evaluate LightSquared’s proposal.

Specifically, in issuing the *Conditional Waiver Order*, the Bureau found that LightSquared’s existing authority did not allow it to provide terrestrial-only services absent a rule waiver.^{176/} The Bureau granted this waiver, but conditioned it on LightSquared’s ability to show that its proposed operations would not cause harmful interference to GPS, a condition which LightSquared did not challenge at the time. As discussed throughout these comments, the *Conditional Waiver Order* set forth a specific interference resolution process designed “to fully study the potential for overload interference to GPS.”^{177/} In addition to the initial TWG process – which “tested more than 130 representative devices in seven different receiver categories, in a number of different test environments” – extensive additional testing was conducted to evaluate LightSquared’s proposal and determine a way for LightSquared’s proposed terrestrial operations

^{173/} *Id.*

^{174/} *California v. FCC*, 905 F.2d at 1230.

^{175/} *Id.*

^{176/} *Conditional Waiver Order* ¶ 24.

^{177/} *Id.* ¶ 41.

and GPS to coexist.^{178/} As further discussed above, the results of this massive testing effort demonstrated harmful interference to a wide range of GPS devices and applications and found that mitigation is not possible at this time.^{179/}

2. *The Bureau Has Engaged, and Is Engaging, in a Reasoned Analysis of the Effects of LightSquared's Proposal on GPS.*

LightSquared criticizes the Commission for the Bureau's release of "the *Public Notice* proposal to suspend all or a significant portion of LightSquared's ATC authorization within one day of the *NTIA Letter*," suggesting that the Commission has arbitrarily and capriciously abdicated its statutory responsibilities under the [Communications] Act to exercise its independent judgment and rely on its own technical expertise."^{180/} LightSquared also contends that the Commission's obligation to conduct a "reasoned analysis" of the record in this proceeding includes the need to critically examine the reports attached to the *NTIA Letter*.^{181/} LightSquared has lost sight of the fact that *this very proceeding* is designed explicitly to help the Commission evaluate the *NTIA Letter* and make a final determination regarding the proposals in the *Public Notice*.^{182/} That this proceeding is taking place is strong evidence that the FCC is, in

^{178/} See Coalition Comments at 2-8 (summarizing testing process); see also *Comment Deadlines Established Regarding the LightSquared Technical Working Group Report*, Public Notice, 26 FCC Rcd 9284 (2011) ("TWG Public Notice"); *Status of Testing in Connection with LightSquared's Request for ATC Commercial Operating Authority*, Public Notice, 26 FCC Rcd 12913 (2011); *NTIA Letter* at 1-2.

^{179/} See, e.g., *TWG Public Notice* at 2 ("The tests demonstrated potentially significant interference between LightSquared operations in the upper portion of the band and various GPS receivers. The tests also identified some interference issues in the lower 10 MHz portion of the band."); Letter from Lawrence E. Strickling, Assistant Secretary for Communications and Information, U.S. Dep't of Commerce, to the Honorable Julius Genachowski, Chairman, FCC (July 6, 2011) (demonstrating that "LightSquared's then-planned deployment of terrestrial operations posed a significant potential for harmful interference to GPS services"); *NTIA Letter* at 8 (finding that LightSquared's proposed terrestrial operations would cause harmful interference to several categories of GPS devices and that mitigation is not feasible at this time).

^{180/} LightSquared Comments at 75.

^{181/} *Id.* at 88-89.

^{182/} *Public Notice* at 1.

fact, conducting a reasoned analysis of the record, including the reports attached to the *NTIA Letter*.

Furthermore, NTIA's analysis did not take place in a vacuum. As Deere points out in its comments, "The technical record is not only extensive, it is also balanced and impartial. LightSquared itself led the TWG test effort, and can therefore not credibly assert that TWG test methodologies or processes were somehow biased or otherwise compromised."^{183/} Lockheed Martin similarly commented that "[t]he *NTIA Letter* comes after a series of intensive testing efforts over the last twelve months – including the Commission-initiated LightSquared [TWG] – of the effects of LightSquared's proposed terrestrial mobile broadband offering on radionavigation-satellite service ("RNSS") systems in the upper adjacent 1559-1610 MHz band."^{184/} LightSquared's characterization of the FCC's action as a "rush to judgment" and an "abdication of its statutory responsibilities" suggests that the FCC had no involvement in the evaluation process and had no advanced knowledge of NTIA's findings. The record clearly shows that this was not and is not the case. The FCC has been fully engaged at every stage of analysis and has in no way ceded its statutory responsibility to NTIA.

The process envisioned by the *Conditional Waiver Order* was and is being properly implemented, and has even been supplemented by additional testing and analysis in an attempt to find a workable solution. Public and private parties have engaged in what can only be considered a herculean effort in order to evaluate LightSquared's proposals, and LightSquared provides no evidence that the Commission or the Bureau did not critically evaluate NTIA's conclusions.

^{183/} Deere Comments at 9.

^{184/} Lockheed Comments at 1-2.

In truth, the source of LightSquared's frustration is not the process, but the outcome. When the Bureau issued its requirement that LightSquared show that its proposed terrestrial network would not interfere with GPS before commencing commercial operations, LightSquared did not object to the condition. Now LightSquared is attempting to rewrite history by arguing that the *Conditional Waiver Order* "imposed a new condition . . . that . . . was unrelated to the waiver LightSquared sought and concerned matters that GPS interests were on notice to raise *before* the Commission permitted – and ordered – LightSquared to invest billions."^{185/} This challenge is untimely and should be summarily rejected.^{186/}

3. *The Decision To Vacate the Conditional Waiver Order Is Not Arbitrary and Capricious.*

As previously discussed, terrestrial-only operations were not authorized in the L-Band until the *Conditional Waiver Order*, and when they were, this authority was conditioned on LightSquared's ability to meet several conditions, including a showing of non-interference to GPS. The results of the *Conditional Waiver Order*'s extensive interference resolution process shows that LightSquared has failed to meet the non-interference condition. Consequently, the decision to vacate the *Conditional Waiver Order* is technically justified and not arbitrary and capricious. The speed with which the Bureau issued the *Public Notice* in no way indicates that the Commission has not engaged in a reasoned analysis; rather, the Bureau has mandated an extensive process designed to fully evaluate LightSquared's proposal and has the benefit of massive amounts of test data and analysis all demonstrating that LightSquared's proposal will harmfully interfere with GPS. The lengths to which the FCC has gone in this instance to

^{185/} LightSquared Comments at 106.

^{186/} See Coalition Comments at 23-28.

evaluate one private party's business model amounts to a "reasoned analysis" and not an "arbitrary and capricious" process as LightSquared contends.

4. *The Decision to Suspend Indefinitely LightSquared's ATC Authority Is Not Arbitrary and Capricious.*

The decision to suspend indefinitely LightSquared's ATC authority is also not arbitrary and capricious. Far from preventing an agency from changing course when circumstances warrant, the Communications Act and the APA authorize the Commission to modify a license when "such action will promote the public interest, convenience, and necessity."¹⁸⁷

The Commission also has an obligation to revisit its decision to grant LightSquared ATC authority in light of the new evidence uncovered during the interference resolution process that even operations under LightSquared's previously existing ATC authority may be problematic.^{188/} The Supreme Court recognizes that "the FCC is obligated to reevaluate its policies when circumstances affecting its rulemaking proceedings change."^{189/} While it was previously believed that LightSquared's existing ATC authority would not pose a threat to GPS, the results of the TWG, NTIA, and other testing have proved otherwise. In light of this evidence, the FCC has an obligation to reconsider its prior grant of authority to LightSquared. Thus, LightSquared's argument that the Commission's proposed action, taking into consideration the processes required by Section 316 of the Communications Act, would violate the APA, must fail.

^{187/} See, e.g., *Service Rules for Advanced Wireless Services in the 2000-2020 MHz and 2180-2200 MHz Bands*, Notice of Proposed Rulemaking and Notice of Inquiry, FCC 12-22 (rel. March 21, 2012) (citing *California Metro Mobile Communications v. FCC*, 365 F.3d 38, 45 (D.C. Cir.2004)).

^{188/} See USGIC Comments at 4; see also Coalition Comments at 28-31.

^{189/} *California v. FCC*, 905 F. 2d. at 1230.

B. The Proposed Actions Would Not Violate LightSquared's Contractual Rights.

LightSquared's assertion that the proposed actions would violate its contractual rights is equally implausible. There was no contract between LightSquared and the Commission. Relying again on its unique interpretation of the history in this case, LightSquared argues that "[t]he Commission's and LightSquared's conduct, oral communications, and writing make clear that the Commission entered into a contract with LightSquared where it guaranteed the ability to build out its network in exchange for helping the Commission achieve important public-policy objectives at a highly accelerated pace."^{190/} LightSquared's assertion that the FCC "guaranteed" the right to provide terrestrial services, irrespective of the effect on other authorized services such as GPS is simply wrong.

As LightSquared points out in its comments, "The basic requirements for a contract with a government agency are identical to any other contract: (1) mutuality of intent to contract; (2) consideration; (3) an unambiguous offer and acceptance[;] and (4) 'actual authority' on the part of the government's representative to bind the government."^{191/} LightSquared strains the boundaries of law and common sense in order to shoe-horn the facts of this case into the contractual analysis, without presenting any actual evidence of the FCC's intent to enter into a contract for favorable regulatory treatment in exchange "for helping the Commission achieve important public-policy objectives at a highly accelerated pace."^{192/} When faced with a similar argument in 2004, the Commission was explicit in its rejection of the idea that a subsequent Commission decision that led to a loss of a license could constitute a breach of contract. It

^{190/} LightSquared Comments at 111.

^{191/} *Id.* at 110 (citing *Schism v. United States*, 316 F.3d 1259, 1278 (Fed. Cir. 2002) (*en banc*)).

^{192/} *Id.* at 112.

stated, “The Commission’s licensing system has never provided any vested right to specific license terms. Rather, it is well established that the Commission always retains the power to alter the terms of existing licenses by rule making.”^{193/}

The cases LightSquared uses to bolster its contract claim are inapposite. In *United States v. Winstar Corp.*, the Federal Savings and Loan Insurance Corporation specifically solicited healthy thrifts and outside investors to take over ailing institutions in a series of “supervisory mergers” in order to stem the rising tide of thrift failures. The principal inducement for these supervisory mergers was an express understanding that the acquisitions would be subject to a particular accounting treatment (referred to as “supervisory goodwill”) that would help the acquiring institutions meet their reserve capital requirements imposed by federal regulations.^{194/} Unlike the financial institutions involved in *Winstar* and its progeny, LightSquared is not claiming that the FCC promised merely to accord it favorable regulatory *treatment* on a limited issue.^{195/} LightSquared is instead insisting that it is owed a favorable regulatory *disposition* for its flawed business plan.^{196/} The Commission never stated that LightSquared could provide ubiquitous terrestrial service. Rather, it explicitly conditioned the terrestrial authority it provided

^{193/} *Facilitating the Provision of Spectrum-Based Services to Rural Areas, and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 19078, ¶ 84 (2004).

^{194/} *United States v. Winstar Corp.*, 518 U.S. 839, 848 (1996).

^{195/} *See id.* at 921 (Scalia, J., concurring in the judgment (“[T]he promise to accord favorable regulatory treatment must be understood as (unsurprisingly) a *promise* to accord favorable regulatory treatment.”))

^{196/} *See* LightSquared Comments at 112 (“LightSquared invested billions of dollars in building out its network based on the authority provided for in the grant of the ATC modification application, *i.e.*, the promise of a regulatory disposition or environment that would enable LightSquared to use its MSS/ATC Band spectrum to deploy a nationwide terrestrial network.”). In fact, the Bureau did accord LightSquared favorable regulatory treatment when it first issued its *Conditional Waiver Order*. The evaluation of LightSquared’s November 2010 application for modification of its existing ATC authorization demonstrates that its original authorization did not permit it to provide stand-alone terrestrial service. The Commission accorded LightSquared favorable treatment by granting a conditional waiver of its integrated service rule in order to accommodate LightSquared’s “updated” business plans.

to LightSquared on its ability to show non-interference with GPS. LightSquared failed to meet the specific condition, and it now cannot proceed.

When viewed in light of the decisions actually adopted by the Commission regarding permissible use of mobile satellite spectrum, LightSquared's novel theory amounts to a claim that the FCC could legally enter into a contract with a private party that predetermined the outcome of a future proceeding, and further obligated it to ignore overwhelming technical evidence of massive damage to the public in order to adhere. This never happened. If it had, no responsible party would ever have thought that such a "contract" could withstand any level of judicial scrutiny. It is impossible to believe that LightSquared could even have imagined, much less reasonably relied upon, such an arbitrary and illegal administrative "contract."

C. The Proposed Actions Do Not Amount to an Unconstitutional Taking.

Similarly, LightSquared's claim that the proposed action "would constitute a taking of LightSquared's property without just compensation in violation of the Fifth Amendment" has no merit.^{197/} The Takings Clause of the Fifth Amendment provides that private property shall not "be taken for public use without just compensation."^{198/} A party challenging governmental action as an unconstitutional taking "bears a substantial burden."^{199/} In light of that understanding, the Supreme Court has stated, "the process for evaluating a regulation's constitutionality involves an examination of the justice and fairness of the governmental action."^{200/} While inquiry as to whether governmental action is an unconstitutional taking, by its

^{197/} LightSquared Comments at 113-117.

^{198/} U.S. Const. Amend. V.

^{199/} *Eastern Enterprises v. Apfel*, 524 U.S. 498, 523 (1998).

^{200/} *Id.* (internal quotations omitted).

nature, does not lend itself to any set formula,^{201/} a regulatory taking cannot occur where there is no cognizable private property interest at stake.^{202/}

Here, there is no such cognizable private property interest at stake. First, and as demonstrated above, LightSquared never had the authority that it now claims the FCC is threatening to take. Second, whatever authority it had does not constitute a property right. Section 301 of the Communications Act is explicit that a grant of a license for radio communication or the transmission of energy does not provide any ownership rights in the licensee.^{203/} LightSquared cites a 2004 decision to support its proposition that “[t]he Commission itself has recognized that Commission licenses may create enforceable property interests,”^{204/} but ignores the express limitations that this decision placed on the recognized property interests at stake. Indeed, the Commission held that in the context of the sale of an authorization of an unbuilt cellular telephone facility, “the plain language of Section 301 . . . does not address the sale of authorizations for stations, whether built or unbuilt, for-profit or not for-profit.”^{205/} It went on to state, however, that the main congressional concern in drafting the statute was that “the Federal Government retain ultimate control over radio frequencies, as

^{201/} *Id.*

^{202/} See, e.g. *Bowen v. Public Agencies Opposed to Social Sec. Entrapment*, 477 U.S. 41, 55 (1986) (holding that a “contractual right” to terminate an agreement did not constitute “property” under the Fifth Amendment); see also *Akins v. U.S.*, 82 Fed.Cl. 619, 623 (Fed. Cir. 2000) (holding that Plaintiff’s regulatory takings claim fails because his expectancy interest in manufacturing and selling Akins Accelerators to the general public is not protected property under the Fifth Amendment).

^{203/} 47 U.S.C. § 301(a) (“It is the purpose of this chapter, among other things, to maintain the control of the United States over all the channels of radio transmission; and to provide for the use of such channels, but not the ownership thereof, by persons for limited periods of time, under licenses granted by Federal authority, and no such license shall be construed to create any right, beyond the terms, conditions, and periods of the license. . . .”)

^{204/} LightSquared Comments at 113.

^{205/} *Facilitating the Provision of Spectrum-Based Services to Rural Areas, and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services*, Report and Order and Further Notice of Proposed Rulemaking, 19 FCC Rcd 19078, ¶ 48 (2004).

against any rights, especially property rights, that might be asserted by licensees who are permitted to use the frequencies.”^{206/} The FCC has repeatedly made clear that “Commission licenses are granted for the use, but not ownership, of radio frequencies,”^{207/} and that licensees do not have a vested right to the continuation [of their licenses] without a change of the rules in effect at the time of the auction.^{208/} The Commission may, for instance, alter the terms of existing licenses by rulemaking.^{209/} The Supreme Court has also affirmed that “licensees do not hold property rights in licenses.”^{210/} While the D.C. Circuit has determined that licensees have limited ownership rights in their licenses, it has noted that there can be no regulatory taking based on those limited ownership rights.^{211/}

This limitation even applies to licenses won at auction – where the licensee, unlike LightSquared in this case, has paid the government for the license.^{212/} It is well-established that

^{206/} *Id.*

^{207/} *Alpine PCS, Inc., CommNet Communications Network, Inc., GLH Communications, Inc., Inforum Communications, Inc., Lancaster Communications, Inc., Allen Leeds, TV Communications Network, Inc., Virginia Communications, Inc.; Requests for Waiver of the Installment Payment Rules and Reinstatement of Licenses*, Memorandum Opinion and Order, 25 FCC Rcd 469, ¶ 84 (2010) (adding that Section 301 of the Communications Act states that no Commission-issued license “shall be construed to create any right, beyond the terms, conditions, and periods of the license.”) (*citing* 47 U.S.C. § 301).

^{208/} *Amendment of the Commission’s Rules Regarding Maritime Automatic Identification Systems*, Report and Order and Further Notice of Proposed Rule Making and Fourth Memorandum Opinion and Order, 21 FCC Rcd 8892, ¶ 44 (2006) (“*MariTEL Order*”)

^{209/} *See Amendment of the Commission’s Rules Regarding Maritime Automatic Identification Systems, et al.*, Memorandum Opinion and Order and Notice of Proposed Rule Making and Fourth Memorandum Opinion and Order, 19 FCC Rcd 20071, ¶ 34 (2004) (*citing United States v. Storer Broadcasting Co.*, 351 U.S. 192, 205 (1956)).

^{210/} *See FCC v. Sanders Bros. Radio Station*, 309 U.S. 470, 475 (1940) (“The policy of the Act is clear that no person is to have anything in the nature of a property right as a result of the granting of a license.”); *see also Ashbacker Radio Corp. v. FCC*, 326 U.S. 327, 331 (1945) (“No licensee obtains any vested interest in any frequency.”).

^{211/} *See Sinclair Broadcasting Group, Inc. v. FCC*, 284 F.3d 148, 167 (D.C. Cir. 2002).

^{212/} *See Amendment of Part 27 of the Commission’s Rules to Govern the Operation of Wireless Communications Services in the 2.3 GHz Band; Establishment of Rules and Policies for the Digital Audio Radio Satellite Service in the 2310-2360 MHz Frequency Band*, Report and Order and Second Report and Order, 25 FCC Rcd 11710, ¶ 159 (2010) (“*SDARS Order*”); *MariTEL Order* ¶ 46.

the Commission retains the power to alter the terms of existing licenses, even with respect to licenses acquired through the auction process.^{213/} For instance, the FCC has held that a licensee of a Satellite Digital Audio Radio Service license, which was issued by auction, did not have a property interest in the spectrum covered by its license such that a rule change that could affect the license would be considered a Fifth Amendment taking of the licensee's property.^{214/} The FCC has consistently upheld the principle that there are no property rights in auctioned spectrum and therefore no "taking" of such auctioned spectrum can occur.^{215/}

D. The Proposed Actions Do Not Violate the Due Process Clause.

It is well-established that "[t]raditional concepts of due process incorporated into administrative law preclude an agency from penalizing a private party for violating a rule without first providing adequate notice of the substance of the rule."^{216/} "Fair notice" is the gravamen of due process in the administrative context, and the legal standard regarding the Commission's duty to provide license applicants adequate notice of its requirements is clear. "It is beyond dispute that an applicant should not be placed in the position of going forward with an application without knowledge of requirements established by the Commission, and elementary fairness requires clarity of standards sufficient to apprise an applicant of what is expected."^{217/}

^{213/} See *Celtronix Telemetry, Inc. v. FCC*, 272 F.3d 589 (D.C. Cir. 2002).

^{214/} See *SDARS Order* ¶ 159.

^{215/} See e.g., *MariTEL Order* ¶ 46.; *Facilitating the Provision of Spectrum-Based Services to Rural Areas and Promoting Opportunities for Rural Telephone Companies to Provide Spectrum-Based Services*, Report and Order and Further Notice of Proposed Rule Making, 19 FCC Rcd 19078, ¶ 84 (2004).

^{216/} *Satellite Broadcasting Co., Inc. v. FCC*, 824 F.2d 1, 3 (D.C. Cir. 1987) (citing *Gates & Fox Co., Inc. v. OSHRC*, 790 F.2d 154, 156 (D.C.Cir. 1986)).

^{217/} *Maxcell Telecom Plus, Inc. v. FCC*, 815 F.2d 1551, 1558 (D.C. Cir. 1987) (citing *Bamford v. FCC*, 535 F.2d 78, 82 (D.C.Cir.1976)).

LightSquared argues that the proposed indefinite suspension of its ATC authorization would violate the due process clause, but this, too, is premised on false assumptions: first, that LightSquared has an enforceable property right in its licensed authority and second, that the lengthy analysis the Commission has undertaken in this matter amounts to insufficient process. As the extensive record in this case indicates, the Commission has followed its specifically delineated procedures for resolving the interference issues. LightSquared was on notice that its conditional authority was subject to its ability to show non-interference to GPS, which it has not done.

LightSquared is correct that the Commission has recognized that the denial of a broadcast license triggers due process protection,^{218/} but it fails to acknowledge that the requirements of due process are merely “that parties receive fair notice before being deprived of property.”^{219/} The Court in *Trinity* held that “[b]efore an agency can sanction a company for its failure to comply with regulatory requirements, the agency must have either put this language into the regulation itself, or at least referenced this language in the regulation.”^{220/} In *Trinity*, the Commission’s regulation did not provide sufficient notice that a company was not “minority controlled” even though a majority of its board of directors were minorities.^{221/} LightSquared cannot similarly claim that the Bureau’s *Conditional Waiver Order* did not put it on notice that its authority was subject to its ability to show non-interference.

The *Conditional Waiver Order* explicitly laid out the conditions that LightSquared was required to meet in order to justify the waiver of the integrated service rule. Specifically, the

^{218/} LightSquared Comments at 117 (citing *Trinity Broad. of Fla., Inc. v. FCC*, 211 F.3d 618, 628 (D.C. Cir. 2000)).

^{219/} *Trinity v. FCC*, 211 F.3d at 628.

^{220/} *Id.* at 631 (citing *United States v. Chrysler Corp.*, 158 F.3d 1350, 1356 (D.C. Cir. 1998)).

^{221/} *Id.* at 629.

Bureau required LightSquared to help organize and fully participate in a working group tasked with “analyzing a variety of types of GPS devices for their susceptibility to overload interference from LightSquared’s terrestrial network of base stations, identifying near-term technical and operational measures that can be implemented to reduce the risk of overload interference to GPS devices, and providing recommendations on steps that can be taken going forward to permit broadband wireless services to be provided in the L-Band MSS frequencies and coexist with GPS devices.”^{222/} The Bureau made clear that “[t]he process [would] be complete once the Commission, after consultation with NTIA, concludes that the harmful interference concerns have been resolved and sends a letter to LightSquared stating that the process is complete.”^{223/} As Deere noted in its comments, LightSquared itself led the TWG test effort,^{224/} so it cannot reasonably claim that it did not have adequate notice of the Commission’s requirements.

E. The Proposed Actions Do Not Violate Either the Equal Protection Clause or the Bill of Attainder Clause.

LightSquared makes additional claims that the Commission’s proposed action would violate the Equal Protection Clause because “LightSquared is a class of one that is being intentionally treated differently from others similarly situated.”^{225/} The Supreme Court has recognized successful equal protection claims brought by a “class of one,” where the plaintiff alleges that she has been intentionally treated differently from others similarly situated and that there is no rational basis for the difference in treatment.^{226/} Under a rational basis review, an

^{222/} *Conditional Waiver Order* ¶ 42.

^{223/} *Id.* ¶ 43.

^{224/} Deere Comments at 9.

^{225/} LightSquared Comments at 119.

^{226/} See, e.g., *Sioux City Bridge Co. v. Dakota County*, 260 U.S. 441 (1923); *Allegheny Pittsburgh Coal Co. v. Commission of Webster Cty.*, 488 U.S. 336 (1989).

administrative agency's interpretation of a statute only violates the equal protection clause if it is not rationally related to any legitimate governmental objective.^{227/}

GPS is a significant national asset, launched as a federal government initiative and paid for by American taxpayers. The federal government has made a significant investment in the GPS constellation and in GPS-related systems and equipment. Government and private users alike have invested billions of dollars in GPS equipment, which are used in critical economic sectors including aviation, agriculture, transportation, construction, engineering, and surveying, to name just a few. Protecting GPS is squarely within the FCC's authority to regulate in the public interest, and the Commission's proposals are clearly rationally related to a legitimate government interest.

Given the resources that the Commission and other parties have expended in the evaluation of LightSquared's business proposal, it is remarkable that LightSquared would argue that the Commission's decision is a violation of the Equal Protection Clause. As discussed *ad nauseum*, the Commission has gone out of its way to accommodate LightSquared in an attempt to salvage its business proposal, and LightSquared cannot now complain about the Commission's treatment simply because it does not like the end result.

LightSquared's claim that the Commission's proposed actions would constitute a bill of attainder are even farther fetched. According to LightSquared, the hallmarks of a bill of attainder are "a severe burden on an individual party, a discernible intent to punish, and action that falls within the historical meaning of legislative punishment."^{228/} Rather than provide any evidence in support of its claim, LightSquared merely states that it is "plain that the burden in

^{227/} *Cook v. Wiley*, 208 F.3d 1314, 1323 (11th Cir. 2000) (citing *Heller v. Doe by Doe*, 509 U.S. 312, 319-20 (1993)).

^{228/} LightSquared Comments at 120 (citing *Selective Serv. Sys. v. Minn. Pub. Interest Research Grp.*, 468 U.S. 841, 846-847 (1984) (internal quotations omitted)).

this case is so severe that it could not possibly be justified by a legitimate purpose.”^{229/} Far from being out to “punish” LightSquared, the Commission has engaged in a thorough evaluation of LightSquared’s business plan and the effect that it will have on GPS, an important national asset. The proposals in question relate to a legitimate government interest. The Commission has not, as LightSquared maintains, confiscated its property,^{230/} as it had no property rights in this case. LightSquared does not articulate any motive for the Commission to punish it, nor would it be able to if it tried. The record is clear that the Commission has repeatedly given LightSquared the benefit of the doubt in this matter, and LightSquared has simply fallen short of the Commission’s expectations. While this outcome is undoubtedly disappointing to LightSquared, it is not a violation of LightSquared’s constitutional rights.

^{229/} LightSquared Comments at 120.

^{230/} *Id.*

VII. CONCLUSION

The *NTIA Letter*, its supporting documents, and the record make it clear that LightSquared has failed to meet the condition imposed upon it by the FCC's International Bureau that it must resolve any potential interference to GPS prior to commencing commercial operations. Consequently, the Bureau's *Conditional Waiver Order* should be revoked and LightSquared's ATC authority suspended indefinitely.

Respectfully submitted,

/s/ Paul G. Scolese

James A. Kirkland
Vice President and General Counsel
TRIMBLE NAVIGATION LIMITED
935 Stewart Drive
Sunnyvale, CA 94085
(408) 481-8000

Paul G. Scolese
COALITION TO SAVE OUR GPS
1333 New Hampshire Avenue, N.W.
Washington, D.C. 20036-1564
(202) 887-4226

Howard J. Symons
Russell H. Fox
Jennifer A. Cukier
Angela Y. Kung
MINTZ, LEVIN, COHN, FERRIS,
GLOVSKY AND POPEO, P.C.
701 Pennsylvania Avenue, N.W.
Suite 900
Washington, DC 20004
(202) 434-7300

M. Anne Swanson
Jason E. Rademacher
DOW LOHNES PLLC
1200 New Hampshire Avenue, N.W.
Suite 800
Washington, DC 20036
(202) 776-2534

Counsel for Garmin International, Inc.

Counsel for Trimble Navigation Limited

March 30, 2012